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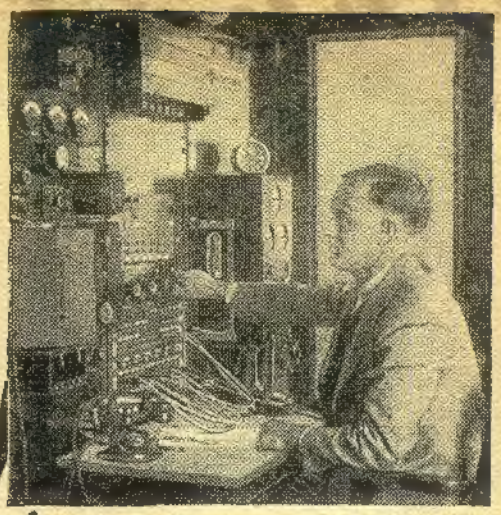

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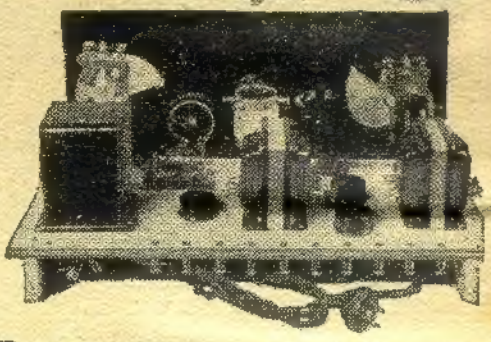

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AMAZING STORIES

Scientific Fiction

Vol. 5 **January, 1931** **No. 10**

In Our Next Issue

TELEVISION HILL (A Serial in Two Parts), Part I, by George McLociard. With the coming of the new inventions recently completed in the matter of practical television, interest in the subject has taken a new impetus. But this is not merely a television story. This is one of the most thrilling, exciting scientific fiction stories it has been our good fortune to offer in "our magazine." We must let this story talk for itself.

THE MAN WHO ANNEXED THE MOON, by Bob Olsen. We don't hear from Mr. Olsen often, but that is obviously because he will offer a story really worth while or he won't send us any. The Moon has been written about a great deal, but that does not take away one bit from the unusualness of this tale, for this author is without a doubt an excellent writer of scientific fiction with plenty of imagination and special and general knowledge.

THE PURPLE PLAGUE, by Russell Hays. Despite our late "war to end war" there is much thought given to possible warfare of the future. Chemists have now become an established entity in the scheme of things. How practicable the ideas suggested by this author might prove remains to be seen, but he has certainly written an instructive piece of fiction of absorbing interest.

BEES FROM BORNEO, by Will H. Gray. The work of the apiarist is important, for the bee is one of the wonders of the world. The very limitations that control them are most interesting, for there are many variations among them, and the queen bee is one of the miracles of the insect world. The author of "The Tide-Projectile Transportation Company, Ltd.," gives us here an ingenious story of unusual interest.

COSMIC POWER, by J. C. Dare. In the struggle for supremacy between money and science, to whom would go the spoils? This short story by our new author contains plenty of science, and is exceedingly entertaining besides.

Other scientific fiction.

In Our January Issue

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Our Cover

this month depicts a scene from the story entitled, "The Prince of Space," by Jack Williamson, showing the adventurers from the Earth being initiated into the horrors of the planet on their arrival on Mars.

Published monthly by Radio-Science Publications, Inc., at 184-10 Jamaica Ave., Jamaica, N. Y.
B. A. MACKINNON-H. K. FLY, Publishers T. O'CONOR SLOANE, Ph.D., Editor

Price 25c a copy; subscription $3.00 a year in U. S. A., $3.50 a year in Canada, $4.00 in all foreign countries.
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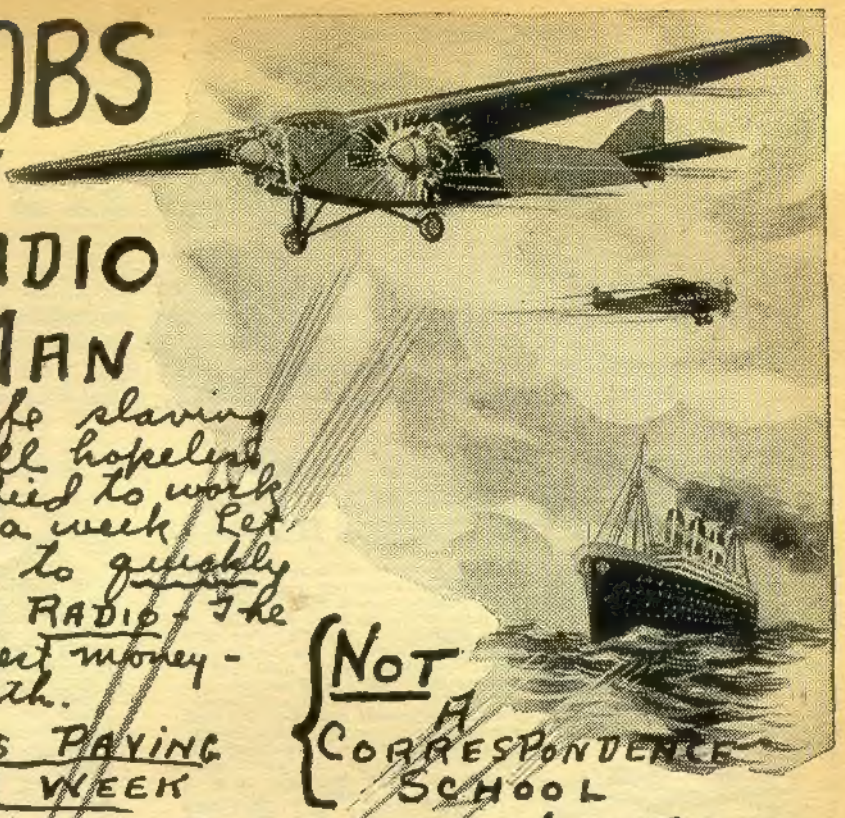

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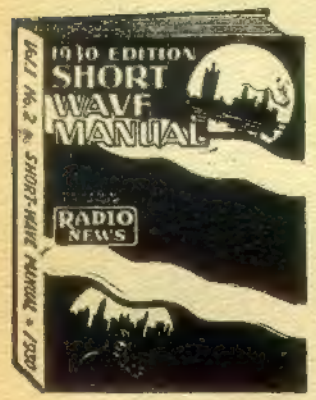

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AMAZING STORIES

THE MAGAZINE OF SCIENTIFICTION

JANUARY, 1931 No. 10

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WILBUR C. WHITEHEAD, *Literary Editor*
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Editorial and General Offices: 381 Fourth Avenue, New York, N. Y.

Extravagant Fiction Today - - - - - - - - - Cold Fact Tomorrow

The Story of Motors

By T. O'Conor Sloane, Ph.D.

MANY centuries ago there was a Grecian mathematician and scientist named Hero, or Heron, who is always called Hero, or Heron of Alexandria. He is supposed to have lived between 200 B. C. and 100 A. D. A good deal is known about him, although naturally most of his works have perished. He was a mathematician of considerable ability and of very high standing for the era he lived in. Hero's fountain, the interesting apparatus so often exhibited, by which water is paradoxically made to rise in a jet above its own level, is more or less an amusing puzzle at first sight, but the achievement of this great philosopher, which is of extreme interest at the present day, is Hero's steam engine. It is a fact that some two thousand years ago a real steam engine was made, and it will be found described in many text books. This steam engine was a reaction turbine, and the turbine may be taken as the most advanced type of modern steam engine. Naturally Hero's engine is a mere toy, but it does involve the turbine principle, and uses directly the principle of reaction, which is employed in rocket propulsion of automobiles and planes, and this too we treat as an imperfect novelty, when applied to anything except fireworks. But the old Greek philosopher was eighteen or twenty centuries ahead of us, for reaction may yet play an important part in propulsion.

When engineers began to build direct pressure steam engines the weight of the atmosphere was used to produce the downward pressure on the piston, for they started at once with the conception of the vertical cylinder and piston. This of course was long before the days of piston rings of which the automobilist hears so much. There was a groove in the piston to be filled with packing, and water was sometimes kept on the top of the piston to keep it airtight. Steam was generated in a boiler, and entering the cylinder below the piston forced it up to the top of its stroke. All the steam had to do was to overcome the atmospheric pressures, and in some of the old beam pumping engines the pump rod was heavily weighted so as to help draw the piston up against the pressure of the air. When the top of the stroke was reached the steam valve was closed, and a jet of water was driven into the cylinder. This condensed the steam and the atmospheric pressure forced the piston down again to the bottom.

It was a very poor arrangement, because the piston and cylinder of a steam engine should be kept as hot as possible. Here both were directly cooled, but this was the first conception of a low pressure steam engine. Then engineers went on to construct high pressure engines of various types in which the steam after doing its work was allowed to escape into the air, and in these early engines, which were often of considerable size and of definitely low speed, the valves were sometimes opened and shut by a workman or boy. It is said that one juvenile valve tender managed to connect his valve handles with strings to the engine so as to make it self-operating, thus indicating a direct advance in the machine. Then the next step came along. The steam from the engine exhaust was admitted into a separate condensing vessel, where it was acted on by a water jet or by refrigerating tubes, so that the steam was condensed outside of the cylinder and the heat in the cylinder was maintained. This was Watts' great invention; in its essence it is the basis of the modern low pressure engine.

The great object to be attained in all types of heat engine, steam, gasoline or any other type, is to cover as large a range of temperature as possible. The hotter the actuating gas is at the one extremity of its action and the colder it is at the other, the more economical is the action.

This is a rough statement of the second law of thermodynamics. In order to increase this range of efficient action within a few years, experiments have been made with mercury, doing the work of steam. Its vapor is very much hotter than that of water at the same pressures, and this on the face of it suggests an economy.

The economy of the gasoline or heavy oil Diesel engine is due to the fact that the temperature at its maximum is that of a burning combustible far up on the heat scale many times hotter than steam. These engines, properly called internal combustion engines, have made the airplane possible. The second law of thermodynamics may be said to be the agent that carries airplanes across continents and around the world, and that drives the dirigibles. Every steam engine is subject to it, for steam is a gas, but the law does the most advantageous work, or rather operates under the most advantageous conditions in the internal combustion engine, because there we use the temperature of burning hydrocarbons directly, instead of the normally much lower temperature of steam, far lower even at high pressures.

The old time low pressure steam engines, in which cold water was injected into the cylinder with every down stroke, worked most disadvantageously, on account of the cooling of the cylinder. And curiously enough, today we repeat that very blunder in cooling the cylinders of internal combustion engines with water or air currents. For the advanced type of steam engine and for the last suggestions for the propulsion of airplanes and automobiles we go back to Hero, the old philosopher of perhaps 20 centuries ago.

It is curious to observe the efforts of mankind to develop the heat engine. The first steam engine of perhaps 2,000 years ago was a turbine—the *Mauritania* of the present time, with turbine engines held the transatlantic speed record for years. The latest experiments in driving cars and airplanes have been in the use of the reaction of moving gases according to Newton's second law of motion. This principle was what was used to drive Hero's steam engine also. And in the early steam engine, centuries after Hero's with cylinder and piston, the error was perpetrated of directly cooling the cylinder with water. This error is perpetuated in the automobile engine of today.

The Prince *of*

By Jack Williamson

Author of "The Metal Man," "The Green Girl," etc.

EVEN the Lick Observatory, which was built at the summit of Mount Wilson, 5885 feet high, at tremendous expense, cannot satisfy the astronomers. An observatory that would reach about twice that height, such as the one built by the scientist in this story, would be more likely to hit the mark. Certainly, the views obtained of the Moon, and even of Mars, through our present apparently gigantic telescopes, undoubtedly call for a higher observatory, fitted with a more enormous telescope, which will some day be established. What may be seen then cannot be foretold with certainty. But that's where the imagination—with scientific visualizations—enters. Mr. Williamson's writing is not new to our readers. At that, this story is sure to make stronger friends for him, and add many new ones to his ever fast-growing list of admirers.

CHAPTER I

Ten Million Eagles Reward!

"Space Flier Found Drifting with Two Hundred Dead! Notorious Interplanetary Pirate—Prince of Space—Believed to Have Committed Ghastly Outrage!"

MR. WILLIAM WINDSOR, a hard-headed, grim-visaged newspaperman of forty, stood nonchalantly on the moving walk that swept him briskly down Fifth Avenue. He smiled with pardonable pride as he listened to the raucous magnetic speakers shouting out the phrases that drew excited mobs to the robot vending machines which sold the yet damp news strips of printed shorthand. Bill had written the account of the outrage; he had risked his life in a mad flight upon a hurtling sunship to get his concise story to New York in time to beat his competitors. Discovering the inmost details of whatever was puzzling or important or exciting in this day of 2131, regardless of risk to life or limb, and elucidating those details to the ten million avid readers of the great daily newspaper, *The Herald-Sun,* was the prime passion of Bill's life.

Incidentally, the reader might be warned at this point that Bill is not, properly speaking, a character in this narrative; he is only an observer. The real hero is that amazing person who has chosen to call himself "The Prince of Space." This history is drawn from Bill's diary, which he kept conscientiously, expecting to write a book of the great adventure.

Bill stepped off the moving sidewalk by the corner vending machine, dropped a coin in the slot, and received a copy of the damp shorthand strip delivered fresh from the presses by magnetic tube. He read his story, standing in a busy street that rustled quietly with the whir of moving walks and the barely audible drone of the thousands of electrically driven heliocars which spun smoothly along on rubber-tired wheels, or easily lifted themselves to skimming flight upon whirling helicopters.

Heliographic advices from the Moon Patrol flier *Avenger* state that the sunship *Helicon* was found today, at 16:19, Universal Time, drifting two thousand miles off the lunar lane. The locks were open, air had escaped, all on board were frozen and dead. Casualties include Captain Stormburg, the crew of 71 officers and men, and 132 passengers, of whom 41 were women. The *Helicon* was bound to Los Angeles from the lunarium health resorts at Tycho on the Moon. It is stated that the bodies were barbarously torn and mutilated, as if the most frightful excesses had been perpetrated upon them. The cargo of the sunship had been looted. The most serious loss is some thousands of tubes of the new radioactive metal, vitalium, said to have been worth nearly a million eagles.

A crew was put aboard the *Helicon* from the *Avenger,* her valves were closed, and she will be brought under her own motor tubes to the interplanetary base at Miami, Florida, where a more complete official examination will be made. No attempt has been made to identify the bodies of the dead. The passenger list is printed below.

Military officials are inclined to place blame for the outrage upon the notorious interplanetary outlaw, who calls himself "The Prince of Space." On several occasions the "Prince" has robbed sunships of cargoes of vitalium, though he has never before committed so atrocious a deed as the murder of scores of innocent passengers. It is stated that the engraved calling card, which the "Prince" is said always to present to the captain of a captured sunship, was not found on the wreck.

Space

Illustrated by
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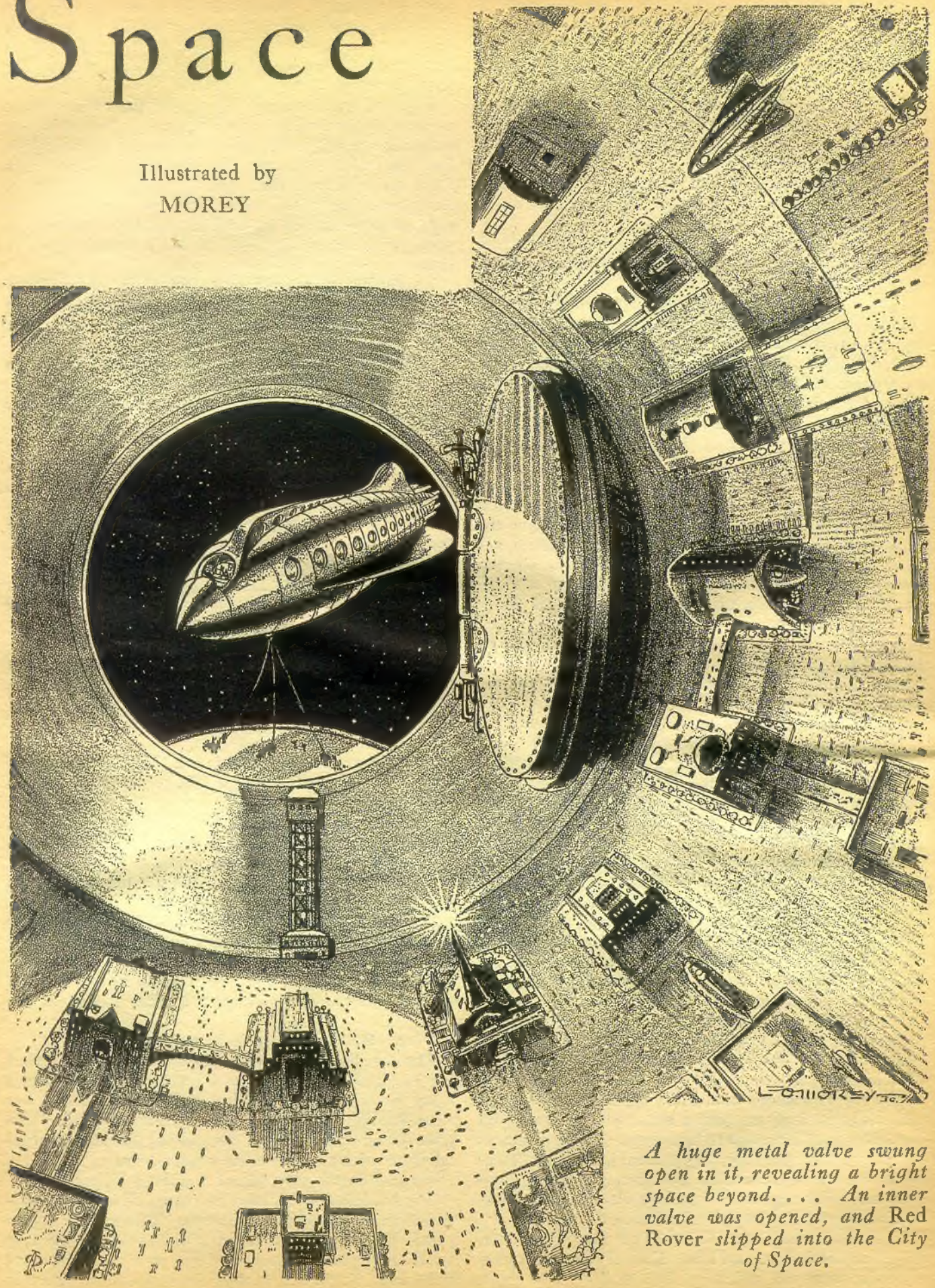


A huge metal valve swung open in it, revealing a bright space beyond. . . . An inner valve was opened, and Red Rover *slipped into the City of Space.*

Further details will be given the public as soon as it is possible to obtain them.

The rewards offered for the "Prince of Space," taken dead or alive, have been materially increased since the outrage. The total offered by the International Confederation, Interplanetary Transport Lunar Mining Corporation, Sunship Corporation, Vitalium Power Company, and various other societies, corporations, newspapers, and individuals, is now ten million eagles.

"Ten million eagles!" Bill exclaimed. "That would mean a private heliocar, and a long, long vacation in the South Seas!"

He snorted, folded up the little sheet and thrust it into his green silk tunic, as he sprang nimbly upon the moving sidewalk.

"What chance have I to see the Prince of Space?"

About him, the slender spires of widely spaced buildings rose two hundred stories into a blue sky free from dust or smoke. The white sun glinted upon thousands of darting heliocars, driven by silent electricity. He threw back his head, gazed longingly up at an amazing structure that rose beside him—at a building that was the architectural wonder of the twenty-second century.

BEGUN in 2125, Trainor's Tower had been finished hardly a year. A slender white finger of aluminum and steel alloy, it rose twelve thousand feet above the canyons of the metropolis. Architects had laughed, six years ago, when Dr. Trainor, who had been an obscure western college professor, had returned from a vacation trip to the moon and announced his plans for a tower high enough to carry an astronomical observatory giving mountain conditions. A building five times as high as any in existence! It was folly, they said. And certain skeptics inquired how an impecunious professor would get funds to put it up. The world had been mildly astonished when the work began. It was astounded when it was known that the slender tower had safely reached its full height of nearly two and a half miles. A beautiful thing it was, in its slim strength—girder-work of glistening white metal near the ground, and but a slender white cylinder for the upper thousands of feet of its amazing height.

The world developed a hungry curiosity about the persons who had the privilege of ascending in a swift elevator to the queer, many-storied cylindrical building atop the astounding tower. Bill had spent many hours in the little waiting room before the locked door of the elevator shaft—bribes to the guard had been a heavy drain upon a generous expense account. But not even bribery had won him into the sacred elevator.

He had given his paper something, however, of the persons who passed sometimes through the waiting room. There was Dr. Trainor, of course, a mild, bald man, with kindly blue eyes and a slow, patient smile. And Paula, his vivaciously beautiful daughter, a slim, small girl, with amazingly expressive eyes. She had been with her father on the voyage to the moon. Scores of others had passed through; they ranged from janitors and caretakers to some of the world's most distinguished astronomers and solar engineers—but they were uniformly reticent about what went on in Trainor's Tower.

And there was Mr. Cain—"The mysterious Mr. Cain," as Bill had termed him. He had seen him twice, a slender man, tall and wiry, lean of face, with dark, quizzical eyes. The reporter had been able to learn nothing about him—and what Bill could not unearth was a very deep secret. It seemed that sometimes Cain was about Trainor's Tower and that more often he was not. It was rumored that he had advanced funds for building it and for carrying on the astronomical research for which it was evidently intended.

Impelled by habit, Bill sprang off the moving walk as he glided past Trainor's Tower. He was standing, watching the impassive guard, when a man came past into the street. The man was Mr. Cain, with a slight smile upon the thin, dark face that was handsome in a stern, masculine sort of way. Bill started, pricked up his ears, so to speak, and resolved not to let this mysterious young man out of sight until he knew something about him.

To Bill's vast astonishment, Mr. Cain advanced toward him, with a quick, decisive step, and a speculative gleam lurking humorously in his dark eyes. He spoke without preamble.

"I believe you are Mr. William Windsor, a leading representative of the *Herald-Sun*."

"True. And you are Mr. Cain—the mysterious Mr. Cain!"

The tall young man smiled pleasantly.

"Yes. In fact, I think the 'mysterious' is due to you. But Mr. Windsor——"

"Just call me Bill."

"——I believe that you are desirous of admission to the Tower."

"I've done my best to get in."

"I am going to offer you the facts you want about it, provided you will publish them only with my permission."

"Thanks!" Bill agreed. "You can trust me."

"I have a reason. Trainor's Tower was built for a purpose. That purpose is going to require some publicity very shortly. You are better able to supply that publicity than any other man in the world."

"I can do it—provided——"

"I am sure that our cause is one that will enlist your enthusiastic support. You will be asked to do nothing dishonorable."

Mr. Cain took a thin white card from his pocket, scrawled rapidly upon it, and handed it to Bill, who read the words, "Admit bearer. Cain."

"Present that at the elevator, at eight tonight. Ask to be taken to Dr. Trainor."

Mr. Cain walked rapidly away, with his lithe, springy step, leaving Bill standing, looking at the card, rather astounded.

At eight that night, a surprised guard let Bill into the waiting room. The elevator attendant looked at the card.

"Yes. Dr. Trainor is up in the observatory."

The car shot up, carrying Bill on the longest vertical trip on earth. It was minutes before the lights on the many floors of the cylindrical building atop the tower were flashing past them. The elevator stopped. The door swung open, and Bill stepped out beneath the crystal dome of an astronomical observatory.

He was on the very top of Trainor's Tower.

The hot stars shone, hard and clear, through a metal-ribbed dome of polished vitrolite. Through the lower panels of the transparent wall, Bill could see the city spread below him—a mosaic of fine points of light, scattered with the colored winking eyes of electric signs; it was so far below that it seemed a city in miniature.

Slanting through the crystal dome was the huge black barrel of a telescope, with ponderous equatorial mounting. Electric motors whirred silently in its mechanism, and little lights winked about it. A man was seated at the eyepiece—he was Dr. Trainor, Bill saw—he was dwarfed by the huge size of the instrument.

There was no other person in the room, no other instrument of importance. The massive bulk of the telescope dominated it.

Trainor rose and came to meet Bill. A friendly smile spread over his placid face. Blue eyes twinkled with mild kindliness. The subdued light in the room glistened on the bald dome of his head.

"Mr. Windsor, of the *Herald-Sun*, I suppose?" Bill nodded, and produced a notebook. "I am very glad you came. I have something interesting to show you. Something on the planet Mars."

"What——"

"No. No questions, please. They can wait until you see Mr. Cain again."

Reluctantly, Bill closed his notebook. Trainor seated himself at the telescope, and Bill waited while he peered into the tube, and pressed buttons and moved bright levers. Motors whirred, and the great barrel swung about.

"Now look," Trainor commanded.

Bill took the seat, and peered into the eyepiece. He saw a little circle of a curious luminous blue-blackness, with a smaller disk of light hanging in it, slightly swaying. The disk was an ocherous red, with darker splotches and brilliantly white polar markings.

"That is Mars—as the ordinary astronomer sees it," Trainor said. "Now I will change eyepieces, and you will see it as no man has ever seen it except through this telescope."

Rapidly he adjusted the great instrument, and Bill looked again.

The red disk had expanded enormously, with great increase of detail. It had become a huge red globe, with low mountains and irregularities of surface plainly visible. The prismatic polar caps stood out with glaring whiteness. Dark, green-gray patches, splotched burned orange deserts, and thin, green-black lines—the controversal "canals" of Mars—ran straight across the planet, from white caps toward the darker equatorial zone, intersecting at little round greenish dots.

"Look carefully," Trainor said. "What do you see in the edge of the upper right quadrant, near the center of the disk and just above the equator?"

Bill peered, saw a tiny round dot of blue—it was very small, but sharply edged, perfectly round, bright against the dull red of the planet.

"I see a little blue spot."

"I'm afraid you see the death-sentence of humanity!"

ORDINARILY Bill might have snorted—newspapermen are apt to become exceedingly skeptical. But there was something in the gravity of Trainor's words, and in the strangeness of what he had seen through the giant telescope in the tower observatory, that made him pause.

"There's been a lot of fiction," Bill finally remarked, "in the last couple of hundred years. Wells' old book, 'The War of the Worlds,' for example. General theory seems to be that the Martians are drying up and want to steal water. But I never really——"

"I don't know what the motive may be," Trainor said. "But we know that Mars has intelligent life—the canals are proof of that. And we have excellent reason to believe that that life knows of us, and intends us no good. You remember the Enbers Expedition?"

"Yes. In 2099. Enbers was a fool who thought that if a sunship could go to the moon, it might go to Mars just as well. He must have been struck by meteorites."

"There is no reason why Enbers might not have reached Mars in 2100," said Trainor. "The heliographic dispatches continued until he was well over half way. There was no trouble then. We have very good reason to think that he landed, that his return was prevented by intelligent beings on Mars. We know that they are using what they learned from his captured sunship to launch an interplanetary expedition of their own!"

"And that blue spot has something to do with it?"

"We think so. But I have authority to tell you nothing more. As the situation advances, we will have need for newspaper publicity. We want you to take charge of that. Mr. Cain, of course, is in supreme charge. You will remember your word to await his permission to publish anything."

Trainor turned again to the telescope.

With a little clatter, the elevator stopped again at the entrance door of the observatory. A slender girl ran from it across to the man at the telescope.

"My daughter Paula, Mr. Windsor," said Trainor.

Paula Trainor was an exquisite being. Her large eyes glowed with a peculiar shade of changing brown. Black hair was shingled close to her shapely head. Her face was small, elfinly beautiful, the skin almost tranparent. But it was the eyes that were remarkable. In their lustrous depths sparkled mingled essence of childish innocence, intuitive, age-old wisdom, and quick intelligence—intellect that was not coldly reasonable, but effervescent, flashing to instinctively correct conclusions. It was an oddly baffling face, revealing only the mood of the moment. One could not look at it and say that its owner was good or bad, indulgent or stern, gentle or hard. It could be, if she willed, the perfect mirror of the moment's thought—but the deep stream of her character flowed unrevealed behind it.

Bill looked at her keenly, noted all that, engraved the girl in the notebook of his memory. But in her he saw only an interesting feature story.

"Dad's been telling you about the threatened invasion from Mars, eh?" she inquired in a low, husky voice, liquid and delicious. "The most thrilling thing, isn't it? Aren't we lucky to know about it, and to be in the fight against it!—instead of going on like all the rest of the world, not dreaming there is danger?"

Bill agreed with her.

"Think of it! We may even go to Mars, to fight 'em on their own ground!"

"Remember, Paula," Trainor cautioned. "Don't tell Mr. Windsor too much."

"All right, Dad."

Again the little clatter of the elevator. Mr. Cain had come into the observatory, a tall, slender young man, with a quizzical smile, and eyes dark and almost as enigmatic as Paula's.

Bill, watching the vivacious girl, saw her smile at Cain. He saw her quick flush, her unconscious tremor. He guessed that she had some deep feeling for the man. But he seemed unaware of it. He merely nodded to the girl, glanced at Dr. Trainor, and spoke briskly to Bill.

"Excuse me, Mr. Win—er, Bill, but I wish to see Dr.

Trainor alone. We will communicate with you when it seems necessary. In the meanwhile, I trust you to forget what you have seen here tonight, and what the Doctor has told you. Good evening."

Bill, of necessity, stepped upon the elevator. Five minutes later he left Trainor's Tower. Glancing up from the vividly bright, bustling street, with its moving ways and darting heliocars, he instinctively expected to see the starry heavens that had been in view from the observatory.

But a heavy cloud, like a canopy of yellow silk in the light that shone upon it from the city, hung a mile above. The upper thousands of feet of the slender tower were out of sight above the clouds.

After breakfast next morning Bill bought a shorthand news strip from a robot purveyor. In amazement and some consternation he read:

PRINCE OF SPACE RAIDS TRAINOR'S TOWER

Last night, hidden by the clouds that hung above the city, the daring interplanetary outlaw, the self-styled Prince of Space, suspected of the *Helicon* outrage, raided Trainor's Tower. Dr. Trainor, his daughter Paula, and a certain Mr. Cain are thought to have been abducted, since they are reported to be missing this morning.

It is thought that the raiding ship drew herself against the Tower, and used her repulsion rays to cut through the walls. Openings sufficiently large to admit the body of a man were found this morning in the metal outer wall, it is said.

There can be no doubt that the raider was the "Prince of Space" since a card engraved with that title was left upon a table. This is the first time the pirate has been known to make a raid on the surface of the earth—or so near it as the top of Trainor's Tower.

Considerable alarm is being felt as a result of this and the *Helicon* outrage of yesterday. Stimulated by the reward of ten million eagles, energetic efforts will be made on the part of the Moon Patrol to run down this notorious character.

CHAPTER II

Bloodhounds of Space

TWO days later Bill jumped from a landing heliocar, presented his credentials as special correspondent, and was admitted to the Lakehurst base of the Moon Patrol. Nine slender sunships lay at the side of the wide, high-fenced field, just in front of their sheds. In the brilliant morning sunlight they scintillated like nine huge octagonal ingots of polished silver.

These war-fliers of the Moon Patrol were eight-sided, about twenty feet in diameter and a hundred long. Built of steel and the new aluminum bronzes, with broad vision panels of heavy vitrolite, each carried sixteen huge positive ray tubes. These mammoth vacuum tubes, operated at enormous voltages from vitalium batteries, were little different in principle from the "canal ray" apparatus of some centuries before. Their "positive rays," or streams of atoms which had lost one or more electrons, served to drive the sunship by reaction—by the well-known principle of the rocket motor.

And the sixteen tubes mounted in twin rings about each vessel served equally well as weapons. When focused on a point, the impact-pressure of their rays equaled that of the projectile from an ancient cannon. Metal in the positive ray is heated to fusion, living matter carbonized and burned away. And the positive charge carried by the ray is sufficient to electrocute any living being in contact with it.

This Moon Patrol fleet of nine sunships was setting out in pursuit of the Prince of Space, the interplanetary buccaneer who had abducted Paula Trainor and her father, and the enigmatic Mr. Cain. Bill was going aboard as special correspondent for the *Herald-Sun*.

On the night before the *Helicon*, the sunship which had been attacked in space, had been docked at Miami by the rescue crew put aboard from the *Avenger*. The world had been thrown into a frenzy by the report of the men who had examined the two hundred dead on board.

"Blood sucked from *Helicon* victims!" the loud speakers were croaking. "Mystery of lost sunship upsets world! Medical examination of the two hundred corpses found on the wrecked space flier show that the blood had been drawn from the bodies, apparently through curious circular wounds about the throat and trunk. Every victim bore scores of these inexplicable scars. Medical men will not attempt to explain how the wounds might have been made.

"In a more superstitious age, it might be feared that the Prince of Space is not man at all, but a weird vampire out of the void. And, in fact, it has been seriously suggested that, since the wounds observed could have been made by no animal known on earth, the fiend may be a different form of life, from another planet."

Bill found Captain Brand, leader of the expedition, just going on board the slender, silver *Fury*, flagship of the fleet of nine war-fliers. He had sailed before with this bluff, hard-fighting guardsman of the space lanes; he was given a hearty welcome.

"Hunting down the Prince is a good-sized undertaking, from all appearances," Bill observed.

"Rather," big, red-faced Captain Brand agreed. "We have been after him seven or eight times in the past few years—but I think his ship has never been seen. He must have captured a dozen commercial sunships."

"You know, I rather admire the Prince—" Bill said, "or did until that *Helicon* affair. But the way those passengers were treated is simply unspeakable. Blood sucked out!"

"It is hard to believe that the Prince is responsible for that. He has never needlessly murdered anyone before—for all the supplies and money and millions worth of vitalium he has taken. And he has always left his engraved card—except on the *Helicon*.

"But anyhow, we blow him to eternity on sight!"

The air-lock was open before them, and they walked through, and made their way along the ladder (now horizontal, since the ship lay on her side) to the bridge in the bow. Bill looked alertly around the odd little room, with its vitrolite dome and glistening instruments, while Captain Brand flashed signals to the rest of the fleet for sealing the locks and tuning the motor ray generators.

A red rocket flared from the *Fury*. White lances of flame darted from the down turned vacuum tubes. As one, the nine ships lifted themselves from the level field. Deliberately they upturned from horizontal to vertical positions. Upward they flashed through the air, with slender white rays of light shooting back from the eight rear tubes of each.

Bill, standing beneath the crystal dome, felt the turning of the ship. He felt the pressure of his feet against the floor, caused by acceleration, and sat down in a convenient padded chair. He watched the earth become a great bowl, with sapphire sea on the one hand and green-brown land and diminishing, smokeless city on the other. He watched the hazy blue sky become deepest azure, then black, with a million still stars bursting out in pure colors of yellow and red and blue. He looked down again, and saw the earth become convex, an enormous bright globe, mistily visible through haze or air and cloud.

Swiftly the globe drew away. And a tiny ball of silver, half black, half rimmed with blinding flame, sharply marked with innumerable round craters, swam into view beyond the misty edge of the globe—it was the moon.

Beyond them flamed the sun—a ball of blinding light, winged with a crimson sheet of fire—hurling quivering lances of white heat through the vitrolite panels. Blinding it was to look upon it, unless one wore heavily tinted goggles.

Before them hung the abysmal blackness of space, with the canopy of cold hard stars blazing as tiny scintillant points of light, at an infinite distance away. The Galaxy was a broad belt of silvery radiance about them, set with ten thousand many-colored jewels of fire. Somewhere in the vastness of that void they sought a daring man, who laughed at society, and called himself the Prince of Space.

The nine ships spread out, a thousand miles apart. Flickering heliographs—swinging mirrors that reflected the light of the sun—kept them in communication with bluff Captain Brand, while many men at telescopes scanned the black, star-studded sweep of space for the pirate of the void.

Days went by, measured only by chronometer, for the winged, white sun burned ceaselessly. The earth had shrunk to a little ball of luminous green, bright on the sunward side, splotched with the dazzling white of cloud patches and polar caps.

Sometimes the black vitalium wings were spread, to catch the energy of the sun. The sunship draws its name from the fact that it is driven by solar power. It utilizes the remarkable properties of the rare radioactive metal, vitalium, which is believed to be the very basis of life, since it was first discovered to exist in minute traces in those complex substances so necessary to all life, the vitamins. Large deposits were discovered at Kepler and elsewhere on the moon during the twenty-first century. Under the sun's rays vitalium undergoes a change to triatomic form, storing up the vast energy of sunlight. The vitalium plates from the sunshine are built into batteries with alternate sheets of copper, from which the solar energy may be drawn in the form of electric current. As the battery discharges, the vitalium reverts to its stabler allotropic form, and may be used again and again. The Vitalium Power Company's plants in Arizona, Chili, Australia, the Sahara, and the Gobi now furnish most of the earth's power. The sunship, recharging its vitalium batteries in space, can cruise indefinitely.

IT was on the fifth day out from Lakehurst. The *Fury*, with her sister ships spread out some thousands of miles to right and left, was cruising at five thousand miles per hour, at heliocentric elevation 93.-243546, ecliptic declination 7°, 18′ 46″ north, right ascension XIX hours, 20 min., 31 sec. The earth was a little green globe beside her, and the moon a thin silver crescent beyond.

'Object ahead!" called a lookout in the domed pilot-house of the *Fury*, turning from his telescope to where Captain Brand and Bill stood smoking, comfortably held to the floor by the ship's acceleration. "In Scorpio, about five degrees above Antares. Distance fifteen thousand miles. It seems to be round and blue."

"The Prince, at last!" Brand chuckled, an eager grin on his square chinned face, light of battle flashing in his blue eyes.

He gave orders that set the heliographic mirrors flickering signals for all nine of the Moon Patrol fliers to converge about the strange object, in a great crescent. The black fins that carried the charging vitalium plates were drawn in, and the full power of the motor ray tubes thrown on, to drive ahead each slender silver flier at the limit of her acceleration.

Four telescopes from the *Fury* were turned upon the strange object. Captain Brand and Bill took turns peering through one of them. When Bill looked, he saw the infinite black gulf of space, silvered with star-dust of distant nebulae. Hanging in the blackness was an azure sphere, gleaming bright as a great globe cut from turquoise. Bill was reminded of a similar blue globe he had seen—when he had stood at the enormous telescope on Trainor's Tower, and watched a little blue circle against the red deserts of Mars.

Brand took two or three observations, figured swiftly.

"It's moving," he said. "About fourteen thousand miles per hour. Funny! It is moving directly toward the earth, almost from the direction of the planet Mars. I wonder——" He seized the pencil, figured again. "Queer. That thing seems headed for the earth, from a point on the orbit of Mars, where that planet was about forty days ago. Do you suppose the Martians are paying us a visit?"

"Then it's not the Prince of Space?"

"I don't know. Its direction might be just a coincidence. And the Prince might be a Martian, for all I know. Anyhow, we're going to find what that blue globe is!"

Two hours later the nine sunships were drawn up in the form of a great half circle, closing swiftly on the blue globe, which had been calculated to be about one hundred feet in diameter. The sunships were nearly a thousand miles from the globe, and scattered along a curved line two thousand miles in length. Captain Brand gave orders for eight forward tubes on each flier to be made ready for use as weapons. From his own ship he flashed a heliographic signal.

"The *Fury*, of the Moon Patrol, demands that you show ship's papers, identification tags for all passengers, and submit to search for contraband."

The message was three times repeated, but no reply came from the azure globe. It continued on its course. The slender white sunships came plunging swiftly toward it, until the crescent they formed was not two hundred miles between the points, the blue globe not a hundred miles from the war-fliers.

Then Bill, with his eye at a telescope, saw a little spark of purple light appear beside the blue globe. A tiny, bright point of violet-red fire, with a white line running from it, back to the center of the sphere. The purple spark grew, the white line lengthened. Abruptly, the

newspaperman realized that the purple was an object hurtling toward him with incredible speed.

EVEN as the realization burst upon him, the spark became visible as a little red-blue sphere, brightly luminous. A white beam shone behind it, seemed to push it with ever-increasing velocity. The purple globe shot past, vanished. The white ray snapped out.

"A weapon!" he exclaimed.

"A weapon and a warning!" said Brand, still peering through another eyepiece. "And we reply!"

"Heliograph!" he shouted into a speaking tube. "Each ship will open with one forward tube, operating one second twelve times per minute. Increase power of rear tubes to compensate repulsion."

White shields flickered. Blindingly brilliant rays, straight bars of dazzling opalescence, burst intermittently from each of the nine ships, striking across a hundred miles of space to batter the blue globe with a hail of charged atoms.

Again a purple spark appeared from the sapphire globe, with a beam of white fire behind it. A tiny purple globe, hurtling at an inconceivable velocity before a lance of white flame. It reached out, with a certain deliberation, yet too quickly for a man to do more than see it.

It struck a sunship, at one tip of the crescent formation.

A dazzing flash of violet flame burst out. The tiny globe seemed to explode into a huge flare of red-blue light. And where the slim, eight-sided ship had been was a crushed and twisted mass of metal.

"A solid projectile!" Brand cried. "And driven on the positive ray! Our experts have tried it, but the ray always exploded the shell. And that was some explosion! I don't know what—unless atomic energy!"

The eight sunships that remained were closing swiftly upon the blue globe. The dazzling white rays flashed intermittently from them. They struck the blue globe squarely—the fighting crews of the Moon Patrol are trained until their rays are directed with deadly accuracy. The azure sphere, unharmed, shone with bright radiance—it seemed that a thin mist of glittering blue particles was gathering about it, like a dust of powdered sapphires.

Another purple spark leapt from the turquoise globe.

In the time that it took a man's eyes to move from globe to slim, glistening sunship, the white ray had driven the purple spark across the distance. Another vivid flash of violet light. And another sunship became a hurtling mass of twisted wreckage.

"We are seven!" Brand quoted grimly.

"Heliograph!" he shouted into the mouthpiece. "Fire all forward tubes one second twenty times a minute. Increase rear power to maximum."

White rays burst from the seven darting sunships, flashing off and on. That sapphire globe grew bright, with a strange luminosity. The thin mist of sparkling blue particles seemed to grow more dense about it.

"Our rays don't seem to be doing any good," Brand muttered, puzzled. "The blue about that globe must be some sort of vibratory screen."

Another purple spark, with the narrow white line of fire behind it, swept across to the flier from the opposite horn of the crescent, burst into a sheet of blinding red-violet light. Another ship was a twisted mass of metal.

"Seven no longer!" Brand called grimly to Bill.

"Looks as if the Prince has got us beaten!" the reporter cried.

"Not while a ship can fight!" exclaimed the Captain. "This is the Moon Patrol!"

Another tiny purple globe traced its line of light across the black, star-misted sky. Another sunship crumpled in a violet flash.

"They're picking 'em off the ends," Bill observed. "We're in the middle, so I guess we're last."

"Then," said Captain Brand, "we've got time to ram 'em."

"Control!" he shouted into the speaking tube. "Cut off forward tubes and make all speed for the enemy. Heliograph! Fight to the end! I am going to ram them!"

Another red-blue spark moved with its quick deliberation. A purple flash left another ship in twisted ruin.

Bill took his eye from the telescope. The blue globe, bright under the rays, with the sapphire mist sparkling about it, was only twenty miles away. He could see it with his naked eye, drifting swiftly among the familiar stars of Scorpio.

It grew larger very swiftly.

With the quickness of thought, the purple sparks moved out alternately to right and to left. They never missed. Each one exploded in purple flame, crushed a sunship.

"Three fliers left," Bill counted, eyes on the growing blue globe before them. "Two left. Good-by, Brand." He grasped the bluff Captain's hand. "One left. Will we have time?"

He looked forward. The blue globe, with the dancing, sparkling haze of sapphire swirling about it, was swiftly expanding.

"The last one! Our turn now!"

He saw a tiny fleck of purle light dart out of the expanding azure sphere that they had hoped to ram. Then red-violet flame seemed to envelope him. He felt the floor of the bridge tremble beneath his feet: He heard the beginning of a shivering crash like that of shattering glass. Then the world was mercifully dark and still.

CHAPTER III

The City of Space

BILL lay on an Alpine glacier, a painful broken leg inextricably wedged in a crevasse. It was dark, frightfully cold. In vain he struggled to move, to seek light and warmth, while the grim grip of the ice held him, while bitter wind howled about him and the piercing cold of the blizzard crept numbingly up his limbs.

He came to with a start, realized that it was a dream. But he was none the less freezing, gasping for thin, frigid air, that somehow would not come into his lungs. All about was darkness. He lay on cold metal.

"In the wreck of the *Fury!*" he thought. "The air is leaking out. And the cold of space! A frozen tomb!"

He must have made a sound, for a groan came from beside him. He fought to draw breath, tried to speak. He choked, and his voice was oddly high and thin.

"Who are——"

He ended in a fit of coughing, felt warm blood spraying from his mouth. Faintly he heard a whisper beside him.

"I'm Brand. The Moon Patrol—fought to the last!"

Bill could speak no more, and evidently the redoubtable coptain could not. For a long time they lay in freezing silence. Bill had no hope of life, he felt only very grim satisfaction in the fact that he and Brand had not been killed outright.

But suddenly he was thrilled with hope. He heard a crash of hammer blows upon metal, sharp as the sound of snapping glass in the thin air. Then he heard the thin hiss of an oxygen lance.

Someone was cutting a way to them through the wreckage. Only a moment later, it seemed, a vivid bar of light cleft the darkness, searched the wrecked bridge, settled upon the two limp figures. Bill saw grotesque figures in clumbrous metal space suits clambering through a hole they had cut. He felt an oxygen helmet being fastened about his head, heard the thin hiss of the escaping gas, and was once more able to breathe.

Again he slipped into oblivion.

He awoke with the sensation that infinite time had passed. He sat up quickly, feeling strong, alert, fully recovered in every faculty, a clear memory of every detail of the disastrous encounter with the strange blue globe-ship springing instantly to his mind.

He was in a clean bed in a little white-walled room. Captain Brand, a surprised grin on his bluff, rough-hewn features, was sitting upon another bed beside him. Two attendants in white uniform stood just inside the door; and a nervous little man in black suit, evidently a doctor, was hastily replacing gleaming instruments in a leather bag.

A tall man appeared suddenly in the door, clad in a striking uniform of black, scarlet, and gold—black trousers, scarlet military coat and cap, gold buttons and decorations. He carried in his hand a glittering positive ray pistol.

"Gentlemen," he said in a crisp, gruff voice, "you may consider yourselves prisoners of the Prince of Space."

"How come?" Brand demanded.

"The Prince was kind enough to have you removed from the wreck of your ship, and brought aboard the *Red Rover,* his own sunship. You have been kept unconscious until your recovery was complete."

"And what do you want with us now?" Brand was rather aggressive.

The man with the pistol smiled. "That, gentlemen, I am happy to say, rests largely with yourselves."

"I am an officer in the Moon Patrol," said Brand. "I prefer death to anything——"

"Wait, Captain. You need have none but the kindest feelings for my master, the Prince of Space. I now ask you nothing but your word as an officer and a gentleman that you will act as becomes a guest of the Prince. Your promise will lose you nothing and win you much."

"Very good, I promise," Brand agreed after a moment. "——for twenty-four hours."

He pulled out his watch, looked at it. The man in the door lowered his pistol, smiling, and walked across to shake hands with Brand.

"Call me Smith," he introduced himself. "Captain of the Prince's cruiser, *Red Rover.*"

Still smiling, he beckoned toward the door.

"And if you like, gentlemen, you may come with me to the bridge. The *Red Rover* is to land in an hour."

Brand sprang nimbly to the floor, and Bill followed. The flier was maintaining a moderate acceleration—they felt light, but were able to walk without difficulty. Beyond the door was a round shaft, with a ladder through its length. Captain Smith clambered up the ladder. Brand and Bill swung up behind him.

After an easy climb of fifty feet or so, they entered a domed pilot-house, with vitrolite observation panels, telescopes, maps and charts, and speaking tube—an arrangement similiar to that of the *Fury.*

Black, star-strewn heavens lay before them. Bill looked for the earth, found it visible in the periscopic screens, almost behind them. It was a little green disk, the moon but a white dot beside it.

"We land in an hour!" he exclaimed.

"I didn't say where," said Captain Smith, smiling. "Our landing place is a million miles from the earth."

"Not on earth! Then where——"

"At the City of Space."

"The City of Space!"

"The capital of the Prince of Space. It is not a thousand miles before us.

Bill peered ahead, through the vitrolite dome, distinguished the bright constellation of Sagittarius with the luminous clouds of the Galaxy behind it.

"I don't see anything——"

"The Prince does not care to advertise his city. The outside of the City of Space is covered with black vitalium—which furnishes us with power. Reflecting none of the sun's rays, it cannot be seen by reflected light. Against the black background of space it is invisible, except when it occults a star."

CAPTAIN SMITH busied himself with giving orders for the landing. Bill and Brand stood for many minutes looking forward through the vitrolite dome, while the motor ray tubes retarded the flier. Presently a little black point came against the silver haze of the Milky Way. It grew, stars vanishing behind its rim, until a huge section of the heavens was utterly black before them.

"The City of Space is in a cylinder," Captain Smith said. "Roughly five thousand feet in diameter, and about that high. It is built largely of meteoric iron which we captured from a meteorite swarm—making navigation safe and getting useful metal at the same time. The cylinder whirls constantly, with such speed that the centrifugal force against the sides equals the force of gravity on the earth. The city is built around the inside of the cylinder—so that one can look up and see his neighbor's house apparently upside down, a mile above his head. We enter through a lock in one end of the cylinder."

A vast disk of dull black metal was now visible a few yards outside the vitrolite panels. A huge metal valve swung open in it, revealing a bright space beyond. The *Red Rover* moved into the chamber, the mighty valve closed behind her, air hissed in about her, an inner valve was opened, and she slipped into the City of Space.

They were, Bill saw, at the center of an enormous cylinder. The sides, half a mile away, above and below them, were covered with buildings along neat, tree-bordered streets, scattered with green lawns, tiny gardens, and bits of wooded park. It seemed very strange to Bill, to see these endless streets about the inside of a tube, so that one by walking a little over three miles in one direction would arrive again at the starting point, in the same way that one gets back to the starting point after going around the earth in one direction.

At the ends of the cylinder, fastened to the huge metal

disks, which closed the ends, were elaborate and complex mechanisms, machines strange and massive. "They must be for heating the city," Bill thought, "and for purifying the air, for furnishing light and power, perhaps even for moving it about." The lock through which they had entered was part of this mechanism.

In the center of each end of the cylinder hung a huge light, seeming large and round as the sun, flooding the place with brilliant mellow rays.

"There are five thousand people here," said Captain Smith. "The Prince has always kept the best specimens among his captives, and others have been recruited besides. We are self-sustaining as the earth is. We use the power of the sun—through our vitalium batteries. We grow our own food. We utilize our waste products—matter here goes through a regular cycle of life and death as on the earth. Men eat food containing carbon, breathe in oxygen, and breathe out carbon dioxide; our plants break up the carbon dioxide, make more foods containing the same carbon, and give off the oxygen for men to breathe again. Our nitrogen, or oxygen and hydrogen, go through similar cycles. The power of the sun is all we need from outside."

Captain Smith guided his "guests" down the ladder, and out through the ship's airlock. They entered an elevator. Three minutes later they stepped off upon the side of the great cylinder that housed the City, and entered a low building with a broad concrete road curving up before it. As they stepped out, it gave Bill a curious dizzy feeling to look up and see busy streets, inverted, a mile above his head. The road before them curved smoothly up on either hand, bordered with beautiful trees, until its ends met again above his head.

The centrifugal force that held objects against the sides of the cylinder acted in precisely the same way as gravity on the earth—except that it pulled *away* from the center of the cylinder, instead of *toward* it.

A glistening heliocar came skimming down upon whirling heliocopters, dropped to rubber tires, and rolled up beside them. A young man of military bearing, clad in a striking uniform of red, black, and gold, stepped out, saluted stiffly.

"Captain Smith," he said, "the Prince desires your attendance at his private office immediately with your guests."

Smith motioned Bill and Captain Brand into the richly upholstered body of the heliocar. Bill, gazing up at the end of the huge cylinder with a city inside it, caught sight, for the first time, of the exterior of the *Red Rover*, the ship that had brought them to the City of Space. It lay just beside the massive machinery of the air-lock, supported in a heavy metal cradle, with the elevator tube running straight from it to the building behind them.

"Look, Brand!" Bill gasped. "That isn't the blue globe. It isn't the ship we fought at all!"

Brand looked. The *Red Rover* was much the same sort of ship that the *Fury* had been. She was slender and tapering, cigar-shaped, some two hundred feet in length and twenty-five in diameter—nearly twice as large as the *Fury*. She was cylindrical, instead of octagonal, and she mounted twenty-four motor tubes, in two rings fore and aft, of twelve each, instead of eight.

Brand turned to Smith. "How's this?" he demanded. "Where is the blue globe? Did you have two ships?"

A smile flickered over Smith's stern face. "You have a revelation waiting for you. But it is better not to keep the Prince waiting."

They stepped into the heliocar. The pilot sprang to his place, set the electric motors whirring. The machine rolled easily forward, took the air on spinning helicopters. The road, lined with green gardens and bright cottages, dropped away "below" them, and other houses drew nearer "above." In the center of the cylinder the young man dextrously inverted the flier; and they continued on a straight line toward an imposing concrete building which now seemed "below."

THE heliocar landed; they sprang out and approached the imposing building of several stories. Guards uniformed in scarlet, black and gold standing just outside the door held ray pistols in readiness. Smith hurried his "guests" past; they entered a long, high-ceilinged room. It gave a first impression of stately luxury. The walls were paneled with rich dark wood, hung with a few striking paintings. It was almost empty of furniture; a heavy desk stood alone toward the farther end. A tall young man rose from behind this desk, advanced rapidly to meet them.

"My guests, sir," said Smith. "Captain Brand of the *Fury*, and a reporter."

"The mysterious Mr. Cain!" Bill gasped.

Indeed, Mr. Cain stood before him, a tall man, slender and wiry, with a certain not unhandsome sternness in his dark face. A smile twinkled in his black, enigmatic eyes—which none the less looked as if they might easily flash with fierce authority.

"And Mr. Win—— or, I believe you asked me to call you Bill. You seem a very hard man to evade!"

Still smiling enigmatically, Mr. Cain took Bill's hand, and then shook hands with Captain Brand.

"But—are you the Prince of Space?" Bill demanded.

"I am. Cain was only a *nom de guerre*, so to speak. Gentlemen, I welcome you to the City of Space!"

"And you kidnaped yourself?"

"My men brought the *Red Rover* for me."

"Dr. Trainor and his daughter——" Bill ejaculated.

"They are friends of mine. They are here."

"And that blue globe!" said Captain Brand. "What was that?"

"You saw the course it was following?"

"It was headed to intersect the orbit of the earth—and its direction was on a line that cuts the orbit of Mars where that planet was forty days ago."

The Prince turned to Bill. "And you have seen something like that blue globe before?"

"Why, yes. The little blue circle on Mars—that I saw through the great telescope on Trainor's Tower."

A sober smile flickered across the dark lean face of the Prince.

"Then, gentlemen, you should believe me. The earth is threatened with a dreadful danger from Mars. The blue globe that wrecked your fleet was a ship from Mars. It was another Martian flier that took the *Helicon*. I believe I have credit for that ghastly exploit of sucking out the passengers' blood." His smile became grimly humorous. "One of the consequences of my position."

"Martian fliers?" echoed Captain Brand. "Then how did we come to be on your ship?"

"I haven't any weapon that will meet those purple atomic bombs on equal terms—though we are now working out a new device. I had Smith cruising around the blue globe in our *Red Rover* to see what he could learn. He was investigating the wrecks, and found you alive."

"You really mean that men from Mars have come this

near the earth?" Captain Brand was frankly incredulous.

"Not men," the Prince corrected, smiling. "But *things* from Mars have done it. They have already landed on earth, in fact."

He turned to the desk, picked up a broad sheet of cardboard.

"I have a color photograph here."

Bill studied it, saw that it looked like an aerial photograph of a vast stretch of mountain and desert, a monotonous expanse of gray, tinged with green and red.

"A photograph, taken from space, of part of the state of Chihuahua, Mexico. And see!"

He pointed to a little blue disk in the green-gray expanse of a plain, just below a narrow mountain ridge, with the fine green line that marked a river just beside it.

"That blue circle is the first ship that came. It was the things aboard it that sucked the blood out of the people on the *Helicon*."

Captain Brand was staring at the tall, smiling man, with a curious expression on his red, square-chinned face. Suddenly he spoke.

"Your Highness, or whatever we must call you——"

"Just call me Prince. Cain is not my name. Once I had a name—but now I am nameless!"

The thin dark face suddenly lined with pain, the lips closed in a narrow line. The Prince swept a hand across his high forehead, as if to sweep something unpleasant away.

"Well, Prince, I'm with you. That is, if you want an officer from the Moon Patrol." A sheepish smile overspread his bluff features. "I would have killed a man for suggesting that I would ever do such a thing. But I'll fight for you as well as I ever did for the honor of the Patrol."

"Thanks, Brand!" The Prince took his hand, smiling again.

"Count me in too, of course," said Bill.

"Both of you will be valuable men," said the Prince.

He picked up a sheaf of papers, scanned them quickly, seemed to mark off one item from a sheet and add another.

"The *Red Rover* sets out for the earth in one hour, gentlemen. We're going to try a surprise attack on that blue globe in the desert. You will both go aboard."

"And I'm going too!" A woman's voice, soft and a little husky, spoke beside them. Recognizing it, Bill turned to see Paula Trainor standing behind them, an eager smile on her elfinly beautiful face. Her amazing eyes were fixed upon the Prince, their brown depths filled, for the moment, with passionate wistful yearning.

"Why, no, Paula," the Prince said. "It's dangerous!"

Tears swam mistily in the golden orbs. "I will go! I must! I must!" The girl cried out the words, a sobbing catch in her voice.

"Very well, then," the Prince agreed, smiling absently. "You father will be along of course. But anything will be likely to happen."

"But you will be there in danger, too!" cried the girl.

"We start in an hour," said the Prince. "Smith, you may take Brand and Windsor back aboard the *Red Rover*."

"Curse his fatherly indifference!" Bill muttered under his breath as they walked out through the guarded door. "Can't he see that she loves him?"

Smith must have heard him, for he turned to him, spoke confidentially. "The Prince is a determined misogynist. I think an unfortunate love affair was what ruined his life—back on the earth. He left his history, even his name, behind him. I think a woman was the trouble. He won't look at a woman now."

They were outside again, startled anew by the amazing scene of a street of houses and gardens, that curved evenly up on either side of them and met above, so that men were moving about, head downward directly above them.

The heliocar was waiting. The three got aboard, were lifted and swiftly carried to the slender silver cylinder of the *Red Rover*, where it hung among the ponderous machinery of the air-lock, on the end of the huge cylinder that housed the amazing City of Space.

"I will show you your rooms," said Captain Smith. "And in an hour we are off to attack the Martians in Mexico."

CHAPTER IV

Vampires in the Desert

FORTY hours later the *Red Rover* entered the atmosphere of the earth, above northern Mexico. It was night, the desert was shrouded in blackness. The telescopes revealed only the lights at ranches scattered as thinly as they had been two centuries before.

Bill was in the bridge-room, with Captain Smith.

"The blue globe that destroyed your fleet has already landed here," Smith said. "We saw both of them before they slipped into the shadow of night. They were right together, and it seems that a white metal building has been set up between them."

"The Prince means to attack? In spite of those purple atomic bombs?" Bill seemed surprised.

"Yes. They are below a low mountain ridge. We land on the other side of the hill, a dozen miles off, and give 'em a surprise at dawn."

"We'd better be careful," Bill said doubtfully. "They're more likely to surprise us. If you had been in front of one of those little purple bombs, flying on the white ray!"

"We have a sort of rocket torpedo that Doc Trainor invented. The Prince means to try that on 'em."

The *Red Rover* dropped swiftly, with Smith's skilled hands on the controls. It seemed but a few minutes until the dark shadow of the earth beneath abruptly resolved itself into a level plain scattered with looming shapes that were clumps of mesquite and sagebrush. The slim silver cylinder came silently to rest upon the desert, beneath stars that shone clearly, though to Bill they seemed dim in comparison with the splendid wonders of space.

Three hours before dawn, five men slipped out through the air-lock. The Prince himself was the leader, with Captains Brand and Smith, Bill, and a young officer named Walker. Each man carried a searchlight and a positive ray pistol. And strapped upon the back of each was a rocket torpedo—a smooth, white metal tube, four feet long and as many inches thick, weighing some eighty pounds.

Dr. Trainor, kindly, bald-headed old scientist, was left in charge of the ship. He and his daughter came out of the air-lock into the darkness, to bid the five adventurers farewell.

'We should be back by night," said the Prince, his even white teeth flashing in the darkness. "Wait for us until then. If we don't come, return at once to the City

of Space. I want no one to follow us, and no attempt made to rescue us if we don't come back. If we aren't back by tomorrow night we shall be dead."

"Very good, sir," Trainor nodded.

"I'm coming with you, then," Paula declared suddenly.

"Absolutely you are not!" cried the Prince. "Dr. Trainor, I command you not to let your daughter off the ship until we return."

Paula turned quickly away, a slim pillar of misty white in the darkness. Bill heard a little choking sound; he knew that she had burst into tears.

"I can't let you go off into such danger, without me!" she cried, almost hysterical. "I can't!"

The Prince swung a heavy torpedo higher on his shoulders, and strode off over bare gravel toward the low rocky slope of the mountain that lay to northward, faintly revealed in the light of the stars. The other four followed silently. The slender sunship, with the old scientist and his sobbing daughter outside the air-lock, quickly vanished behind them.

With only an occasional cautious flicker of the flash-lights the five men picked their way over bare hard ground, among scattered clumps of mesquite. Presently they crossed a barren lava bed, clambering over huge blocks of twisted black volcanic rock. Up the slope of the mountain they struggled, sweating under heavy burdens, blundering into spiky cactus, stumbling over boulders and sagebrush.

When the silver and rose of dawn came in the purple eastern sky, the five lay on bare rock at the top of the low ridge, overlooking the flat, mesquite-covered valley beyond. The valley floor was a brownish green in the light of morning, the hills that rose far across it a hazy blue-gray, faintly tinged with green on age-worn slopes.

Like a string of emeralds dropped down the valley lay an endless wandering line of cottonwoods, of a light and vivid green that stood out from the somber plain. These trees traced the winding course of a stream, the Rio Casas Grandes.

Lying against the cottonwoods, and rising above their tops, were two great spheres of blue, gleaming like twin globes of lapis lazuli in the morning light. They were not far apart, and between them rose a curious domed structure of white, silvery metal.

Each of the five men lifted his heavy metal tube, leveled it across a boulder before him. The Prince, alert and smiling despite the dust and stain of the march through the desert, spoke to the others.

"This little tube along the top of the torpedo is a telescope sight. You will peer through, get the cross hairs squarely upon your target, and hold them there. Then press this nickeled lever. That starts the projectile inside the case to spinning so that inertia will hold it true. Then, being certain that the aim is correct, press the red button. The torpedo is thrown from the case by compressed air, and a positive ray mechanism drives it true to the target. When it strikes, about fifty pounds of Dr. Trainor's new explosive, *trainite*, will be set off.

"Walker, you and Windsor take the right globe. Smith and Brand, the left. I'll have a shot at that peculiar edifice between them."

Bill balanced his torpedo, peered through the telescope, and pressed the lever. The hum of a motor came from the heavy tube.

"All ready?" the Prince inquired.

"Ready," each man returned.

"Fire!"

Bill pressed the red button. The tube drove heavily backward in his hands, and then was but a light, sheet-metal shell. He saw a little gleam of white light before him, against the right blue globe, a diminishing point. It was the motor ray that drove the torpedo speeding toward its mark.

GREAT flares of orange light hid the two azure spheres and the white dome between them. The spheres and the dome crumpled and vanished, and a thin haze of bluish smoke swirled about them.

"Good shooting!" the Prince commented. "This motor torpedo of Trainor's ought to put a lot of the old fighting equipment in the museum—if we were disposed to bestow such a dangerous toy upon humanity.

"But let's get over and see what happened."

Grasping ray pistols, they sprang to their feet and plunged down the rocky slope. It was five miles to the river. Nearly two hours later it was, when the five men slipped out of the mesquites, to look two hundred yards across an open, grassy flat to the wall of green trees along the river.

Three great heaps of wreckage lay upon the flat. At the right and the left were crumpled masses of bright silver metal—evidently the remains of the globes. In the center was another pile of bent and twisted metal, which had been the domed building.

"Funny that those blue globes look like ordinary white metal now," said Smith.

"I wonder if the blue is not some sort of etheric screen?" Brand commented. "When we were fighting, our rays seemed to take no effect. It occurred to me that some vibratory wall might have stopped them."

"It's possible," the Prince agreed. "I'll take up the possibilities with Trainor. If they have such a screen, it might even be opaque to gravity. Quite a convenience in maneuvering a ship."

As they spoke, they were advancing cautiously, stopping to pick up bits of white metal that had been scattered about by the explosion.

Suddenly Bill's eyes caught movement from the pile of crumpled metal that had been the white dome. It seemed that a green plant was growing quickly from among the ruins. Green tendrils shot up amazingly. Then he saw on the end of a twisted stalk a glowing purple thing that looked somehow like an eye.

At first sight of the thing he had stopped in amazement, leveling his deadly ray pistol and shouting, "Look out!"

Before the shout had died in his throat, before the others had time to turn their heads, they caught the flash of metal among the twining green tentacles. The thing was lifting a metal object.

Then Bill saw a tiny purple spark dart from a bright little mechanism that the green tendrils held. He saw a blinding flash of violet light. His consciousness was cut off abruptly.

The next he knew he was lying on his back on rocky soil. He felt considerably bruised and battered, and his right eye was swollen so that he could not open it. Struggling to a sitting position, he found his hands and feet bound by bloody manacles of unfamiliar design. Captain Brand was lying on his elbow beside him, half under the thin shade of a mesquite bush. Brand looked much torn and disheveled; blood was streaming across his face from a gash in his scalp. His hands and feet also were bound with fetters of white metal.

"What happened?" Bill called dazedly.

"Not so loud," Brand whispered. "The thing—a Martian left alive, I guess it is. Must have been somewhere out in the brush when we shot. It blew us up with an atomic bomb. Smith and Walker dead—blown to pieces,"

"And the Prince?"

"I can speak for myself."

Hearing the familiar low voice, Bill turned. He saw the Prince squatted down, in the blazing sunshine, hands and feet manacled, hat off and face covered with blood and grime.

"Was it that—that green thing?" Bill asked.

"Looks like a sort of animated plant," said the Prince. "A bunch of green tentacles, that it uses for hands. Three purple eyes on green stalks. Just enough of a body to join it all together. Not like anything I ever saw. But the Martians, originating under different conditions, ought to be different."

"What is going to happen now?" Bill inquired.

"Probably it will suck our blood—as it did to the passengers of the *Helicon*," Brand suggested grimly.

Windsor fell silent. It was almost noon. The desert sun was very hot. The motionless air was oppressive with a dry, parching heat; and flies buzzed annoyingly about his bleeding cuts. Wrists and ankles ached under the cruel pressure of the manacles.

'Wish the thing would come back, and end the suspense," Brand muttered.

Bill reflected with satisfaction that he had no relatives to be saddened by his demise. He had no great fear of death. Newspaper work in the twenty-second century is not all commonplace monotony; your veteran reporter is pretty well inured to danger.

"Glad I haven't anyone to worry about me," he observed.

"So am I," the Prince said bitterly. "I left them all, years ago."

"But you have someone!" Bill cried. "It isn't my business to say it, but that makes no difference now. And you're a fool not to know. Paula Trainor loves you! This will kill her!"

The Prince looked up, a bitter smile visible behind the bloody grime on his thin dark face.

"Paula—in love with me! We're friends, of course. But love! I used to believe in love. I have not been always a nameless outcast of space. Once I had name, family—even wealth and position. I trusted my name and my honor to a beautiful woman. I loved her! She said she loved me—I thought she meant it. She used me for a tool. I was trustful; she was clever."

The dark eyes of the Prince burned in fierce anger.

"When she was through with me she left me to die in disgrace. I barely escaped with my life. She had robbed me of my name, wealth, position. She named me the outlaw. She made me appear a traitor to those who trusted me—then laughed at me. She laughed at me and called me a fool. I was—but I won't be again!"

"At first I was filled with anger at the whole world, at the unjust laws and the silly conventions and the cruel intolerance of men. I became the pirate of space. A pariah. Fighting against my own kind. Struggling desperately for power."

For a few moments he was moodily silent, slapping at the flies that buzzed around his bloody wounds.

"I gained power. And I learned of the dangers from Mars. First I was glad. Glad to see the race of man swept out. Parasites men seemed. Insects. Life—what is it but a kind of decay on a mote in space? Then I got a saner view, and built the City of Space, to save a few men. Then because the few seemed to have noble qualities, I resolved to try to save the world.

"But it is too late. We have lost. And I have had enough of love, enough of women, with their soft, alluring bodies, and the sweet lying voices, and the heartless scheming."

THE Prince fell into black silence, motionless, heedless of the flies that swarmed about him. Presently Brand contrived, despite his manacles, to fish a packet of cigarettes from his pocket, extract one, and tossed the others to Bill, who managed to light one for the Prince. The three battered men sat in dazzling sun and blistering heat, smoking and trying to forget heat and flies and torturing manacles—and the death that loomed so near.

It was early noon when Bill heard a little rustling beyond the mesquites. In a moment the Martian appeared. A grotesque and terrifying being it was. Scores of green tentacles, slender and writhing, grew from an insignificant body. Three lidless, purple eyes, staring, alien, and malevolent, watched them alertly from foot-long green stalks that rose above the body. The creature half walked on tentacles extended below it, half dragged itself along by green appendages that reached out to grasp mesquite limbs above it. One inch-thick coil carried a curious instrument of glittering crystal and white metal—it was a strange, gleaming thing, remotely like a ray pistol. And fastened about another tentacle was a little metal ring, from which an odd-looking little bar dangled.

The thing came straight for the Prince. Bill screamed a warning. The Prince saw it, twisted himself over on the ground, tried desperately to crawl away. The thing reached out a slender tentacle, many yards long. It grasped him about the neck, drew him back.

In a moment the dreadful being was crouching in a writhing green mass above the body of the manacled man. Once he screamed piteously, then there was no sound save loud, gasping breaths. His muscles knotted as he struggled in agony against the fetters and the coils of the monster.

Bill and Captain Brand lay there, unable either to escape or to give assistance. In silent horror they watched the scene. They saw that each slender green tentacle ended in a sharp-edged suction disk. They watched the disks forcing themselves against the throat of the agonized man, tearing a way through his clothing to his body. They saw constrictions move down the rubber-like green tentacles as if they were sucking, while red drops oozed out about the edge of the disks.

"Our turn next," muttered Captain Brand.

"And after us, the world!" Bill breathed, tense with horror.

A narrow, white beam, blindingly brilliant, flashed from beyond the dull green foliage of the mesquite. It struck the crouching monster waveringly. Without a sound, it leapt, flinging itself aside from the body of the Prince. It raised its curious weapon. A tiny purple spark darted from it.

A shattering crash rang out at a little distance. There was a thin scream—a woman's scream.

Then the white ray stabbed at the monster again, and it collapsed in a twitching heap of thin green coils, upon the still body of the Prince.

A slender girl rushed out of the brush, tossed aside

a ray pistol, and flung herself upon the monster, trying to drag it from the Prince. It was Paula Trainor. Her clothing was torn. Her skin was scratched and bleeding from miles of running through the desert of rocks and cactus and thorny mesquite. She was evidently exhausted. But she flung herself with desperate energy to the rescue of the injured man.

The body of the dead thing was light enough. But the sucking disks still clung to the flesh. They pulled and tore it when she tugged at them. She struggled desperately to drag them loose, by turns sobbing and laughing hysterically.

"If you can help us get loose, we might help," Bill suggested.

The girl raised a piteous face. "Oh, Mr. Bill—Captain Brand! Is he dead?"

"I think not, Miss Paula. The thing had just jumped on him. Buck up!"

"See the little bar—it looks like a sliver of aluminum—fastened to the metal ring about that coil?" Brand said. "It might be the key for these chains. End of it seems to be shaped about right. Suppose you try it?"

In nervous haste, the girl tore the little bar from its ring. With Brand's aid, she was able to unlock his fetters. The Captain lost no time in freeing Bill and removing the manacles from the unconscious Prince.

The thin, rubber-like tentacles could not be torn loose. Brand cut them with his knife. He found them tough and fibrous. Red blood flowed from them when they were severed.

Bill carried the injured man down to the shade of the cottonwoods, brought water to him in a hat from the muddy little stream below. In a few minutes he was conscious, though weak from loss of blood.

Captain Brand, after satisfying himself that Paula had killed the Martian, and that it was the only one that had survived in the wreckage of the blue globes and the metal dome, set off to cross the mountain and bring back the sunship.

When the *Red Rover* came into view late that evening, a beautiful slender bar of silver against the pyrotechnic gold and scarlet splendor of the desert sunset, the Prince of Space was hobbling about, supported on Bill's arm, examining the wreckage of the Martian fliers.

Paula was hovering eagerly about him, anxious to aid him. Bill noticed the pain and despair that clouded her brown eyes. She had been holding the Prince's head in her arms when he regained consciousness. Her lips had been very close to his, and bright tears were brimming in her golden eyes.

Bill had seen the Prince push her away, then thank her gruffly when he had found what she had done.

"Paula, you have done a great thing for the world," Bill had heard him say.

"It wasn't the world at all! It was for you!" the girl had cried, tearfully.

She had turned away, to hide her tears. And the Prince had said nothing more.

The *Red Rover* landed beside the wreckage of the Martian fliers. After a few hours spent in examining and photographing the wrecks, in taking specimens of the white alloy of which they were built, and of other substances used in the construction, they all went back on the sunship, taking the dead Martian and other objects for further study. Brand took off for the upper atmosphere.

"Captain Brand," the Prince said as they stood in the bridge room, "since the death of poor Captain Smith this morning, I believe you are the most skillful sunship officer in my organization. Hereafter you are in command of the *Red Rover*, with Harris and Vincent as your officers.

"We have a huge task before us. The victory we have won is but the first hand in the game that decides the fate of Earth."

CHAPTER V

The Triton's Treasure

"I MUST have at least two tons of vitalium," the Prince of Space told Bill, when the newspaperman came to the bridge of the *Red Rover* after twenty hours in the bunk. The Prince was pale and weak from loss of blood, but seemed to suffer no other ill effects from his encounter with the Martian.

"Two tons of vitalium!" Bill exclaimed. "A small demand! I doubt if there is that much on the market, if you had all the Confederation's treasury to buy it with."

"I must have it, and at once! I am going to fit out the *Red Rover* for a voyage to Mars. It will take that much vitalium for the batteries."

"We are going to Mars!"

"The only hope for humanity is for us to strike first and to strike hard!"

"If the world knew of the danger, we could get help."

"That's where you come in. I told you that I should need publicity. It is your business to tell the public about things. I want you to tell humanity about the danger from Mars. Make it convincing and make it strong! Say anything you like so long as you leave the Prince of Space out of it. I have the body of the Martian that attacked me preserved in alcohol. You have that and the wreckage in the desert to substantiate your story. I will land you at Trainor's Tower in New York tonight. You will have twenty-four hours to convince the world, and raise two tons of vitalium. It has to be done!"

"A big order," Bill said doubtfully. "But I'll do my best."

The city was a bright carpet of twinkling lights when the *Red Rover* darted down out of a black sky, hovering for a moment over Trainor's Tower. When it flashed away, Bill was standing alone on top of the loftiest building on earth, in his pocket a sheaf of manuscript on which he had been at work for many hours, beside him a bulky package that contained the preserved body of the weird monster from Mars.

He opened the trapdoor—which was conveniently unlocked—took up the package, and clambered down a ladder into the observatory. An intent man was busy at the great telescope—which pointed toward the red planet Mars. The man looked understandingly at Bill, and nodded toward the elevator.

In half an hour Bill was exhibiting his package and his manuscript to the night editor of the *Herald-Sun*.

"The greatest news in the century!" he cried. "The Earth attacked by Mars! It was a Martian ship that took the *Helicon*. I have one of the dead creatures from Mars in this box."

The astounded editor formed a quick opinion that his star reporter had met with some terrifying expe-

rience that had unsettled his brain. He listened skeptically while Bill related a true enough account of the cruise of the Moon Patrol ships, and of the battle with the blue globe. Bill omitted any mention of the City of Space and its enigmatic ruler; but let it be assumed that the *Fury* had rammed the globe and that it had fallen in the desert. He ended with a wholly fictitious account of how a mysterious scientist had picked him up in a sunship, had told him of the invaders from Mars, and had sent him to collect two tons of vitalium to equip his ship for a raid on Mars. Bill had spent many hours in planning his story; he was sure that it sounded as plausible as the amazing reality of the Prince of Space and his wonderful city.

The skeptical editor was finally convinced, as much by his faith in Bill's probity as by the body of the green monster, the scraps of a strange white metal, and the photographs, which he presented as material evidence. The editor radioed to have a plane sent from El Paso, Texas, to investigate the wrecks. When it was reported that they were just as Bill had said, the *Herald-Sun* issued an extra, which carried Bill's full account, with photographs of the dead monster, and scientific accounts of the other evidence. There was an appeal for two tons of vitalium, to enable the unknown scientist to save the world by making a raid on Mars.

The story created an enormous sensation all over the world. A good many people believed it. The *Herald-Sun* actually received half a million eagles in subscriptions to buy the vitalium—a sum sufficient to purchase about eleven ounces of that precious metal.

Most of the world laughed. It was charged that Bill was insane. It was charged that the *Herald-Sun* was attempting to expand its circulation by a baseless canard. Worse, it was charged that Bill, perhaps in complicity with the management of the great newspaper, was making the discovery of a new sort of creature in some far corner of the world the basis for a gigantic fraud, to secure that vast amount of vitalium.

Examination proved that the wrecks in the desert had been demolished by explosion instead of by falling. A court injunction was filed against the *Herald-Sun* to prevent collection of the subscriptions, and Bill might have been arrested, if he had not wisely retired to Trainor's Tower.

Finally, it was charged that the pirate, the Prince of Space, was at the bottom of it—possibly the charge was suggested by the fact that the chief object of the Prince's raids had always been vitalium. A rival paper asserted that the pirate must have captured Bill and sent him back to Earth with this fraud.

Public excitement became so great that the reward for the capture of Prince of Space, dead or alive, was raised from ten to fifteen million eagles.

Twenty-four hours later after he had been landed on Trainor's Tower, Bill was waiting there again, with bright stars above him, and the carpet of fire that was New York spread in great squares beneath him. The slim silver ship came gliding down, and hung just beside the vitrolite dome while eager hands helped him through the air-lock. Beyond, he found the Prince waiting, with a question in his eyes.

"No luck," Bill grunted hopelessly. "Nobody believed it. And the town was getting too hot for me. Lucky I had a getaway."

The Prince smiled bitterly as the newspaperman told of his attempt to enlist the aid of humanity.

"About what I expected," he said. "Men will act like men. It might be better, in the history of the cosmos, to let the Martians have this old world. They might make something better of it. But I am going to give humanity a chance—if I can. Perhaps man will develop into something better, in a million years."

"Then there is still a chance—without the vitalium?" Bill asked eagerly.

"Not without vitalium. We have to go to Mars. We must have the metal to fit our flier for the trip. But I have needed vitalium before; when I could not buy it. I took it."

"You mean—piracy!" Bill gasped.

"Am I not the Prince of Space—'notorious interplanetary outlaw' as you have termed me in your paper? And is not the good of the many more than the good of the few? May I not take a few pounds of metal from a rich corporation, to save the earth for humanity?"

"I told you to count me in," said Bill. "The idea was just a little revolutionary."

"We haven't wasted any time while you were in New York. I have means of keeping posted on the shipments of vitalium from the moon. We have found that the sunship *Triton* leaves the moon in about twenty hours, with three months production of the vitalium mines in the Kepler crater. It should be well over two tons."

THIRTY hours later the *Red Rover* was drifting at rest in the lunar lane, with ray tubes dead and no light showing. Men at her telescopes scanned the heavens moonward for sight of the white repulsion rays of the *Triton* and her convoy.

Bill was with Captain Brand in the bridge-room. Eager light flashed in Brand's eyes as he peered through the telescopes, watched his instruments, and spoke brisk orders into the tube.

"How does it feel to be a pirate?" Bill asked, "after so many years spent hunting them down?"

Captain Brand grinned. "You know," he said, "I've wanted to be a buccaneer ever since I was about four years old. I couldn't, of course, so I took the next best thing, and hunted them. I'm not exactly grieving my heart out over what has happened. But I feel sorry for my old pals of the Moon Patrol. Somebody is going to get hurt!"

"And it may be we," said Bill. "The *Triton* will be convoyed by several war-fliers, and she can fight with her own rays. It looks to me like a hard nut to crack."

"I used to dream about how I would take a ship if I were the Prince of Space," said Captain Brand. "I've just been talking our course of action over with him. We've agreed on a plan."

In an hour the Prince and Dr. Trainor entered the bridge. Paula appeared in a few moments. Her face was drawn and pale; unhappiness cast a shadow in her brown eyes. Eagerly, she asked the Prince how he was feeling.

"Oh, about as well as ever, thanks," the lean young man replied in a careless voice His dark, enigmatic eyes fell upon her face. He must have noticed her pallor and evident unhappiness. He met her eyes for a moment, then took a quick step toward her. Bill saw a great tenderness almost breaking past the bitter cynicism in those dark eyes. Then the Prince checked himself, spoke shortly:

"We are preparing for action, Paula. Perhaps you should go back to your stateroom until it is over."

The girl turned silently and moved out of the room. Bill thought she would have tottered and fallen if there had been enough gravity or acceleration to make one fall.

In a few minutes a little group of flickering lights appeared among the stars ahead, just beside the huge, crater-scarred, golden disk of the moon.

"The *Triton* and her convoy!" shouted the men at the telescopes.

"All men to their stations, and clear the ship for action!" Captain Brand gave the order.

"Two Moon Patrol sunships are ahead, cruising fifty miles apart," came the word from the telescope. "A hundred miles behind them is the *Triton*, with two more Patrol fliers twenty-five miles behind her and fifty miles apart."

Brand spoke to the Prince, who nodded. And Brand gave the order.

"Show no lights. Work the ship around with the gyroscopes until our rear battery of tubes will cover the right Patrol ship of the leading pair, and our bow tubes the other."

The whir of the electric motors came from below. The fliers swung about, hanging still in the path of the approaching *Triton*.

"All ready, sir," came a voice from the tube.

A few anxious minutes went by. Then the *Red Rover*, dark and silent, was hanging squarely between the two forward Patrol ships, about twenty-five miles from each of them.

"Fire constantly with all tubes, fore and aft, until the enemy appears to be disabled," Brand gave the order. The Prince spoke to him, and he added, "Inflict no unnecessary damage."

Dazzling white rays flashed from the tubes. Swiftly, they found the two forward sunships. The slender octagons of silver shone white under the rays. They reeled, whirled about, end over end, under the terrific pressure of atomic bombardment. In a moment they glowed with dull red incandescence, swiftly became white. A bluish haze spread about them— the discharge of the electric energy carried by the atoms, which would electrocute any man not insulated against it.

From the three other ships flaming white rays darted, searching for the *Red Rover*. But they had hardly found the mark when Brand ordered his rays snapped out. The two vessels he had struck were but whirling masses of incandescent wreckage—completely out of the battle, though most of the men aboard them still survived in their insulated cells.

The Prince himself spoke into the tube. "Maneuver number forty-one. Drive for the *Triton*."

Driven by alternate burst from front and rear motor tubes, the *Red Rover* started a curiously irregular course toward the treasure ship. Spinning end over end, describing irregular curves, she must have been an almost impossible target.

And twice during each spin, when her axis was in line with the *Triton*, all tubes were fired for an instant, striking the treasure ship with a force that reeled and staggered her, leaving her plates half-fused, twisted and broken.

Three times a ray caught the *Red Rover* for an instant, but her amazing maneuvers, which had evidently been long practised by her crew, carried her on a course so erratic and puzzling that the few rays that found her were soon shaken off.

Before the pirate flier reached the *Triton*, the treasure vessel was drifting helpless, with all rays out. The *Red Rover* passed by her, continuing on her dizzily whirling course until she was directly between the two remaining fliers.

"Hold her still," the Prince then shouted into the tube. "And fire all rays, fore and aft."

BLINDING opalescent rays jetted viciously from the two rings of tubes. Since the *Red Rover* lay between the two vessels, they could not avoid firing upon each other. Her own rays, being fired in opposite directions, served to balance each other and hold her at rest, while the rays of the enemy, as well as those of the pirate that impinged upon them, tended to send them into spinning flight through space.

Blinding fluorescence obscured the vitrolite panels, and the stout walls of the *Red Rover* groaned beneath the pressure of the hail of atoms upon them. Swiftly they would heat, soften, collapse. Or the insulation would burn away and the electric charge electrocute her passengers.

The enemy was in a state as bad. The white beams of the pirate flier had found them earlier, and could be held upon them more efficiently. It was a contest of endurance.

Suddenly the jets of opalescence snapped off the pirate. Bill, gazing out into star-dusted space, saw the two Patrol vessels spinning in mad flight before the pressure of the rays, glowing white in incandescent twisted ruin.

A few minutes later the *Red Rover* was drifting beside the *Triton* holding the wrecked treasure-flier with electromagnetic plates. The air-lock of the pirate vessel opened to release a dozen men in metal vacuum suits, armed with ray pistols and equipped with wrecking tools and oxygen lances. The Prince was their leader.

They forced the air-lock of the *Triton*, and entered the wreck. In a few minutes grotesque metal-suited figures appeared again, carrying heavy leaden tubes filled with the precious vitalium.

The *Red Rover* was speeding into space, an hour later, under full power. The Prince of Space was in the bridge room, with Bill, Captain Brand, Dr. Trainor, and Paula. Bill noticed that the girl seemed pathetically joyous at the Prince's safety, though he gave her scant attention.

"We have the two tons of vitalium," said the Prince. "Nearly forty-six hundred pounds, in fact. Easily enough to furnish power for the voyage to Mars. We have the metal—provided we can get away with it."

"Is there still danger?" Paula inquired nervously.

"Yes. Most of the passengers of the *Triton* were still alive. When I gave her captain my card, he told me that they sent a heliographic S.O.S. as soon as we attacked. Some forty or fifty fliers of the Moon Patrol will be hot on our trail."

The *Red Rover* flew on into space, under all her power. Presently the lookouts picked up a score of tiny flickering points of light behind them. The Moon Patrol was in hot pursuit.

"Old friends of mine," said Captain Brand. "Every one of them would give his life to see us caught. And I suppose every one of them feels now that he has a slice of that fifteen million eagles reward! The Moon Patrol never gives up and never admits defeat."

Tense, anxious hours went by while every battery was delivering its maximum current, and every motor

tube was operating at its absolutely highest potential.

Paula waited on the bridge, anxiously solicitous for the Prince's health—he was still pale and weak from the adventure in the desert. Presently, evidently noticing how tired and worried she looked, he sent her to her stateroom to rest. She went, in tears.

"No chance to fight, if they run us down," said Captain Brand. "We can handle four, but not forty."

Time dragged heavily. The *Red Rover* flew out into space, past the moon, on such a course as would not draw pursuit toward the City of Space. Her maximum acceleration was slightly greater than that of the Moon Patrol fliers, because of the greater number and power of her motor tubes. Steadily she forged away from her pursuers.

At last the flickering lights behind could be seen no longer.

But the *Red Rover* continued in a straight line, at the top of her speed, for many hours, before she turned and slipped cautiously toward the secret City of Space. She reached it in safety, was let through the air-lock. Once more Bill looked out upon the amazing city upon the inner wall of a spinning cylinder. He enjoyed the remarkable experience of a walk along a street three miles in length, which brought him up in an unbroken curve, and back to where he had started.

It took a week to refit the *Red Rover,* in preparation for the voyage to Mars. Her motor ray tubes were rebuilt, and additional vitalium generators installed. The precious metal taken from the Triton was built into new batteries to supply power for the long voyage. Good stocks of food, water, and compressed oxygen were taken aboard, as well as weapons and scientific equipment of all variety.

"We start for Mars in thirty minutes," Captain Brand told Bill when the warning gong had called him and the others aboard.

CHAPTER VI

The Red Star of War

THE *Red Rover* slipped out through the great air-lock of the City of Space, and put her bow toward Mars. The star of the war-god hung before her in the silver-dusted darkness of the faint constellation of Capricornus, a tiny brilliant disk of ocherous red. The Prince of Space, outlawed by the world of his birth, was hurtling out through space in a mad attempt to save that world from the horrors of Martian invasion.

The red point that was Mars hung almost above them, it seemed, almost in the center of the vitrolite dome of the bridge. "We are not heading directly for the planet," Captain Brand told Bill. "Its orbital velocity must be considered. We are moving toward the point that it will occupy in twenty days.

"We can make it in twenty days? Three million miles a day?"

"Easily, if the vitalium holds out, and if we don't collide with a meteorite. There is no limit to speed in space, certainly no practical limit. Acceleration is the important question."

"We may collide with a meteorite you say? Is there much danger?"

"A good deal. The meteorites travel in swarms which follow regular orbits about the sun. We have accurate charts of the swarms whose orbits cross those of the earth and moon. Now we are entering unexplored territory. And most of them are so small, of course, that no telescope would reveal them in time. Merely little pebbles, moving with a speed about a dozen times that of a bullet from an old-fashioned rifle."

"And what are we going to do if we live to get to Mars?"

"A big question!" Brand grinned. "We could hardly mop up a whole planet with the motor rays. Trainor has a few of his rocket torpedoes, but not enough to make much impression upon a belligerent planet. The Prince and Trainor have a laboratory rigged up down below. They are doing a lot of work. A new weapon, I understand. I don't know what will come of it."

Presently Bill found his way down the ladder to the laboratory. He found the Prince of Space and Dr. Trainor hard at work. He learned little by watching them, save that they were experimenting upon small animals, green plants, and samples of the rare vitalium. High tension electricity, electron tubes, and various rays seemed to be in use.

Noticing his interest, the Prince said, "You know that vitalium was first discovered in vitamins, in infinitesimal quantities. The metal seems to be at the basis of all life. It is the trace of vitalium in chlorophyl which enables the green leaves of plants to utilize the energy of sunlight. We are trying to determine the nature of the essential force of life—we know that the question is bound up with the radioactivity of vitalium. We have made a good deal of progress, and complete success would give us a powerful instrumentality."

Paula was working with them in the laboratory, making a capable and eager assistant—she had been her father's helper since her girlhood. Bill noticed that she seemed happy only when near the Prince, that the weight of unhappiness and trouble left her brown eyes only when she was able to help him with some task, or when her skill brought a word or glance of approval from him.

The Prince himself seemed entirely absorbed in his work; he treated the girl courteously enough, but seemed altogether impersonal toward her. To him, she seemed only to be a fellow-scientist. Yet Bill knew that the Prince was aware of the girl's feelings—and he suspected that the Prince was trying to stifle a growing reciprocal emotion of his own.

Bill spent long hours on the bridge with Captain Brand, staring out at the star-scattered midnight of space. The earth shrank quickly, until it was a tiny green disk, with the moon an almost invisible white speck beside it. Day by day, Mars grew larger. It swelled from an ocher point to a little red disk.

Often Bill scanned the spinning scarlet globe through a telescope. He could see the white polar caps, the dark equatorial regions, the black lines of the canals. And after many days, he could see the little blue circle that had been visible in the giant telescope on Trainor's Tower.

"It must be something enormous, to stand out so plainly," he said when he showed it to Captain Brand.

"I suppose so. Even now, we could see nothing with a diameter of less than a mile or so."

"If it's a ship, it must be darned big—big enough for the whole race of 'em to get aboard."

Bill was standing, a few hours later, gazing out through the vitrolite panels at the red-winged splendor of the sun, when suddenly he heard a series of terrific crashes. The ship rocked and trembled beneath him; he

heard the reverberation of hammered metal, and the hiss of escaping air.

"Meteorite!" screamed Brand.

Wildly, he pointed to the vitrolite dome above. In three places the heavy crystal was shattered, a little hole drilled through it, surrounded with radiating cracks. In two other sections the heavy metal wall was dented. Through the holes, the air was hissing out. It formed a white cloud outside, and glistening frost gathered quickly on the crystal panels.

Bill felt the air suddenly drawn from his lungs. He gasped for breath. The bridge was abruptly cold. Little particles of snow danced across it.

"The air is going!" Brand gasped. "We'll suffocate!"

He touched a lever and a heavy cover fell across the ladder shaft, locked itself, making the floor an airtight bulkhead.

"That's right," Bill tried to say. "Give others—chance."

His voice had failed. A soaring came in his ears. He felt as if a malignant giant were sucking out his breath. The room grew dark, swam about him. He reeled; he was blind. A sudden chill came over his limbs—the infinite cold of space. He felt hot blood spurting from his nose, freezing on his face. Faintly he heard Brand moving, as he staggered and fell into unconsciousness.

WHEN he looked about again, air and warmth were coming back. He saw that the shaft was still sealed, but air was hissing into the room through a valve. Captain Brand lay inert beside him on the floor. He looked up at the dome, saw that soft rubber patches had been placed over the holes, where air-pressure held them fast. The Captain had saved the ship before he fell.

In a moment the door opened. Dr. Trainor rushed in, with Prince and others behind him. They picked up the unconscious Brand and rushed him down to the infirmary. The plucky captain had been almost asphyxiated, but administration of pure oxygen restored him to consciousness. On the following day he was back on the bridge.

The *Red Rover* had been eighteen days out from the City of Space. The loss of air due to collision with the meteorites had brought inconveniences, but good progress had been made. It was only two more days to Mars. The forward tubes had been going many hours, to retard the ship.

"Object dead ahead!" called a lookout from his telescope.

"A small blue globe, coming directly toward us," he added, a moment later.

"Another of their ships, setting out for the earth," Brand muttered. "It will about cook our goose!"

In a few moments the Prince and Dr. Trainor had rushed up the ladder from the laboratory. The blue globe was rushing swiftly toward them; and the *Red Rover* was plunging forward at many thousand miles per hour.

"We can't run from it," said Brand. "It is still fifty thousand miles away, but we are going far too fast to stop in that distance. We will pass it in about five minutes."

"If we can't stop, we go ahead," the Prince said, smiling grimly.

"We might try a torpedo on 'em," suggested Dr. Trainor. He had mounted a tube to fire his rocket torpedoes from the bridge. It will have all the speed its own motor rays can develop, *plus* what the ship has at present, *plus* the relative velocity of the globe. That might carry it through."

The Prince nodded assent.

Trainor slipped a slender, gleaming rocket into his tube, sighted it, moved the lever that set the projectile to spinning, and fired. The little white flame of the motor rays dwindled and vanished ahead of them. Quickly, Trainor fired again, and then a third time.

"Switch off the rays and darken the lights," the Prince ordered. "With combined speeds of ten thousand miles a minute, we might pass them without being seen—if they haven't sighted us already."

For long seconds they hurtled onward in tense silence. Bill was at a telescope. Against the silver and black background of space, the little blue disk of the Martian ship was growing swiftly.

Suddenly a bright purple spark appeared against the blue, grew swiftly brighter.

"An atomic bomb!" he cried. "They saw us. We are lost!"

He tensed himself, waiting for the purple flash that would mean the end But the words were hardly out of his mouth when he saw a tiny sheet of violet flame far ahead of them. It flared up suddenly, and vanished as abruptly. The blue disk of the ship still hung before them, but the purple spark was gone. For a moment he was puzzled. Then he understood.

"The atomic bomb struck a torpedo!" he shouted. "It's exploded. And if they think it was we——"

"Perhaps they can't see us, with the rays out," Brand said.

"It is unlikely," Trainor observed, "that the bomb actually struck one of our torpedoes. More likely it was set to be detonated by the gravitational attraction of any object that passed near it."

Still watching the azure globe, Bill saw a sudden flare of orange light against it. A great burst of yellow flame. The blue ball crumpled behind the flame. The orange went out, and the blue vanished with it. Only twisted scraps of white metal were left.

"The second torpedo struck the Martian!" Bill cried.

"And you notice that the blue went out," said Dr. Trainor. "It must be merely a vibratory screen."

The *Red Rover* hurtled on through space, toward the crimson planet that hour by hour and minute by minute expanded before her. The blue disk was now plainly visible against the red. It was apparently a huge globe of azure, similar to the ships they had met, but at least a mile in diameter. She lay just off the red desert, near an important junction of "canals."

"Some huge machine, screened by the blue wall of vibration," Dr. Trainor suggested.

During the last two days the Prince and Dr. Trainor, and their eager assistant, Paula, had worked steadily in the laboratory, without pause for rest. Bill was with them when the Prince threw down his pencil and announced the result of his last calculation.

"The problem is solved," he said. "And its answer means both success and failure. We have mastered the secret of life. We have unlocked the mystery of the ages! A terrific force is at our command—a force great enough to sweep man to the millennium, or to wipe out a planet! But that force is useless without the apparatus to release it."

"We have the laboratory——" Trainor began.

"But we lack one essential thing. We must have a

small amount of cerium, one of the rare earth metals. For the electrode, you know, inside the vitalium grid in our new vacuum tube. And there is not a gram of cerium in all our supplies."

"We can go back to the Earth——" said Trainor.

"That will mean forty days gone, before we could come back—more than forty, because we would have to stop at the City of Space to refit. And all the perils of the meteorites again. I am sure that in less than forty days the Martians will be putting the machine in that enormous blue globe to its dreadful use."

"Then we must land on Mars and find the metal!" said Captain Brand, who had been listening by the door.

"Exactly," said the Prince. "You will pick out a spot that looks deserted, at a great distance from the blue globe. Somewhere in the mountains, as far back as possible from the canals. Land there just after midnight. We will have mining and prospecting equipment ready to go to work when day comes. Almost any sort of ore ought to yield the small quantity of cerium we need."

"Very good, sir," said Brand.

A FEW hours later the *Red Rover* was sweeping around Mars, on a long curve, many thousands of miles from the surface of the red planet.

"We'll pick out the spot to land while the sun is shinning on it," Captain Brand told Bill. "Then we can keep over it, as it sweeps around into the shadow, timing ourselves to land just after midnight."

"Isn't there danger that we may be seen?"

"Of course. We can only minimize it by keeping a few thousand miles above the surface as long as it is day, and landing at night, and in a deserted section."

As they drew nearer, the telescope revealed the surface of the hostile planet more distinctly. Bill peered intently into an eyepiece, scanning the red globe for signs of it malignant inhabitants.

"The canals seem to be strips of greenish vegetation, irrigated from some sort of irrigation system that brings water from the melting ice-caps," he said.

"Lowell, the old American astronomer, knew that two hundred years ago," said Captain Brand, "though some of his contemporaries claimed that they could not see the 'canals.'"

"I can make out low green trees, and metal structures. I think there are long pipes, as well as open channels, to spread the water. And I see a great dome of white metal—it must be five hundred feet across. . . . There are several of them in sight, mostly located where the canals intersect."

"They might be great community buildings—cities," suggested Brand. "On account of the dust-storms that so often hide the surface of the planet, it would probably be necessary to cover a city up in some way."

"And I see something moving. A little blue dot, it seems. Probably a little flier on the same order as those we have seen; but only a few feet in diameter. It seemed to be sailing from one of the white domes to another."

Brand moved to another telescope.

"Yes, I see them. Two in one place. They seem to be floating along, high and fast. And just to the right is a whole line of them, flying one behind the other. Crossing a patch of red desert."

"What's this?" Bill cried in some excitement. "Looks like animals of some kind in a pen. They look like people, almost."

"What! Let me see!"

Brand rushed over from his telescope. Bill relinquished him the instrument. "See. Just above the center of the field. Right in the edge of that cultivated strip, by what looks like a big aluminum water-pipe."

"Yes. Yes, I see something. A big stockade. And it has things in it. But not men, I think. They are gray and hairy. But they seem to walk on two legs."

"Something like apes, maybe."

"I've got it," cried Brand. "They're domestic animals! The ruling Martians are parasites. They must have something to suck blood out of. They live on these creatures!"

"Probably so," Bill admitted. "Do you suppose they will keep people penned up that way, if they conquer the world?"

"Likely." He shuddered. "No good in thinking of it. We must be selecting the place to land."

He returned to his instrument.

"I've got it," he said presently. "A low mountain, in a big sweep of red desert. About sixty degrees north of the equator. Not a canal or a white dome in a hundred miles."

Long hours went by, while the *Red Rover* hung above the chosen landing place, waiting for it to sweep into the shadow of night. Bill peered intently through his telescope, watching the narrow strips of vegetation across the bare stretches of orange desert. He studied the bright metal and gray masonry of irrigation works, the widely scattered, white metal domes that seemed to cover cities, the hurtling blue globes that flashed in swift flight between them. Two or three times he caught sight of a tiny, creeping green thing that he thought was one of the hideous, blood-sucking Martians. And he saw half a dozen broad metal pens, or pastures, in which the hairy gray bipeds were confined.

Shining machines were moving across the green strips of fertile land, evidently cultivating them.

The Prince, Dr. Trainor, and Paula were asleep in their staterooms. Bill retired for a short rest, came back to find the planet beneath them in darkness. The *Red Rover* was dropping swiftly, with Captain Brand still at the bridge.

Rapidly, the stars vanished in an expanding circle below them. Phobos and Deimos, the small moons of Mars, hurtling across the sky with different velocities shed scant light upon the barren desert below. Captain Brand eased the ship down, using the rays as little as possible, to cut down the danger of detection.

The *Red Rover* dropped silently to the center of a low, cliff-rimmed plateau that rose from the red, sandy desert. In the faint light of stars and hurtling moons, the ocherous waste lay flat in all directions—there are no high mountains on Mars. The air was clear, and so thin that the stars shone with hot brilliance, almost, Bill thought, as if the ship were still out in space.

Silent hours went by, as they waited for dawn. The thin white disk of the nearer moon slid down beneath the black eastern horizon, and rose again to make another hurtling flight.

Just before dawn the Prince appeared, an eager smile on his alert lean face, evidently well recovered from the long struggling in the laboratory.

"I've all the mining machinery ready," Captain Brand told him. "We can get out as soon as it's warm enough—it's a hundred and fifty below zero out there now."

"It ought to warm up right soon after sunrise—thin as this air is. You seem to have picked about the lone-

liest spot on the planet, all right. There's a lot of danger, though, that we may be discovered before we get the cerium."

"Funny feeling to be the first men on a new world," said Bill.

"But we're not the first," the Prince said. "I am sure that Envers landed on Mars—I think the Martian ships are based on a study of his machinery."

"Envers may have waited here in the desert for the sun to rise, just as we are doing," murmured Brand. "In fact, if he wanted to look around without being seen, he may have landed right near here. This is probably the best place on the planet to land without being detected."

CHAPTER VII

A Mine on Mars

THE sun came up small and white and hot, shining from a black sky upon an endless level orange waste of rocks and sand, broken with a black swamp in the distant north. Even from the eminence of the time-worn plateau, the straight horizon seemed far nearer than on earth, due to the greater curvature of the planet's surface.

Men were gathering about the air-lock, under the direction of the Prince, assembling mining equipment.

"Shall we be able to go out without vacuum suits?" Bill asked Captain Brand.

"I think so, when it gets warm enough. The air is light—the amount of oxygen at the surface is about equal to that in the air nine miles above sea level on earth. But the pull of gravity here is only about one-third as much as it is on the earth, and less oxygen will be required to furnish energy. I think we can stand it, if we don't take too much exertion."

The rays of the oddly small sun beat fiercely through the thin air. Soon the Prince went into the air-lock, closed the inner door behind him and started the pumps. When the dial showed the pressures equalized he opened the outer door, and stepped out upon the red rocks.

All were watching him intently, through the vitrolite panels. Paula clasped her hands in nervous anxiety. Bill saw the Prince step confidently out, sniff the air as though testing it, and take a few deep breaths. Then he drew his legs beneath him and made an astounding leap, that carried him twenty feet high. He fell in a long arc, struck on his shoulder in a pile of loose red sand. He got up, gasping for air as if the effort had exhausted him, and staggered back to the airlock. Quickly he sealed the outer door behind him, opened the valve, and raised the pressure.

"Feels funny," he said when he opened the inner door. "Like trying to breathe on top of a mountain—only more so. The jump was great fun, but rather exhausting. I imagine it would be dangerous for a fellow with a weak heart. All right to come out now. Air is still cool, but the rocks are getting hot under the sun."

He held open the door. "The guards will come first."

Six of the thirty-odd members of the crew had been detailed to act as guards, to prevent surprise. Each was to carry two rocket torpedoes—such a burden was not too much upon this planet, with its lesser gravity. They would watch from the cliffs at the edge of the little plateau upon which the sunship had landed.

Bill and four other men entered the air-lock—and Paula. The girl had insisted upon having some duty assigned to her, and this had seemed easier than the mining.

The door was closed behind them, the air pumped out until Bill gasped for breath and heard a drumming in his ears. Then the outer door was opened and they looked out upon Mars. Motion was easy, yet the slightest effort was tiring. Bill found himself panting merely from the exertion of lifting the two heavy torpedoes to his shoulders.

With Paula behind him, he stepped through the outer door. The air felt chill and thin. Loose red sand crumbled yieldingly under their feet.

They separated at the door, Bill starting toward the south end of the pleateau, Paula toward the north point, and the men going to stations along the sides.

"Just lie at the top of the cliffs and watch," the Prince had ordered. "When you have anything to report, flash with your ray pistols, in code. Signal every thirty minutes, anyhow. We will have a man watching from the bridge. Report to him anything moving. We will fire off a red signal rocket when you are to come back."

He had tried to keep Paula from going out, but the girl had insisted. At last he had agreed.

"Better to have you keeping watch than handling a pick and shovel, or pushing a barrow," he had told her. "But I hate to see you go so far off. Something might happen. If they find us, though, they will probably get us all. Don't get hurt."

Bill had seen the Prince looking anxiously at the slender, brown-eyed girl as they entered the air-lock. He had seen him move forward quickly, as though to ask her to come back—move forward, and then turn aside with a flush that became a bitterly cynical smile.

As Bill walked across the top of the barren red plateau, he looked back at the girl moving slowly in the opposite direction. He had glanced at her eyes as they left the ship. They were shadowed, heavy-lidded. In their brown depths lurked despair and tragic determination. Bill, watching her now, thought that all life had gone out of her. She seemed a dull automaton, driven only by the energy of a determined will. All hope and life and vivacity had gone from her manner. Yet she walked as if she had a stern task to do.

"I wonder——" Bill muttered. "Can she mean—suicide?"

He turned uncertainly, as if to go after her. Then, deciding that his thought was mere fancy, he trudged on across the red plateau to his station.

Behind him, he saw other parties emerging from the air-lock. The Prince and Dr. Trainor were setting up apparatus of some kind, probably, Bill thought, to take magnetic and meteorological observations. Men with prospecting hammers were scattering over all the plateau.

"Almost any sort of ferruginous rock is sure to contain the tiny amount of cerium we need," Dr. Trainor had said.

BILL reached the end of the plateau. The age-worn cliffs of red granite and burned lava fell sheer for a hundred feet, to a long slope of talus. Below the rubble of sand and boulders the flat desert stretched away, almost visibly curving to vanish beneath the near red horizon.

It was a desolate and depressing scene, this view of a dead and sun-baked planet. There was no sign of living

thing, no moving object, no green of life—the canals, with their verdure, were far out of sight.

"Hard to realize there's a race of vampires across there, living in great metal domes," Bill muttered, as he threw himself flat on the rocks at the lip of the precipice, and leveled one of the heavy torpedoes before him. "But I don't blame 'em for wanting to go to a more cheerful world."

Looking behind him, he soon saw men busy with electric drills not a hundred yards from the slender silver cylinder that was the *Red Rover*. The earth quivered beneath him as a shot was set off, and he saw a great fountain of crushed rock thrown into the air.

Men with barrows, an hour later, were wheeling the crushed rock to gleaming electrical reducing apparatus that Dr. Trainor and the Prince were setting up beside the sunship. Evidently there had been no difficulty in finding ore that carried a satisfactory amount of cerium.

Bill continued to scan the orange-red desert below him through the powerful telescope along the rocket tube. He kept his watch before him, and at half-hour intervals sent the three short flashes with his ray pistol, which meant "All is well."

Two hours must have gone by before he saw the blue globe. It came into view low over the red rim of the desert below him, crept closer on a wavering path.

"Martian ship in view," he signalled. "A blue globe, about ten feet in diameter. Follows curious winding course, as if following something."

"Keep rocket trained upon it," came the cautiously flashed reply. "Fire if it observes us."

"Globe following animals," he flashed back. "Two grayish bipeds leaping before it. Running with marvelous agility."

He was peering through the telescope sight of the rocket tube. Keeping the cross hairs upon the little blue globe, he could still see the creatures that fled before it. They were almost like men—or erect, hairy apes. Bipeds, they were, with human-like arms, and erect heads. Covered with short gray hair or fur, they carried no weapons.

They fled from the globe at a curious leaping run, which carried them over the flat red desert with remarkable speed. They came straight for the foot of the cliff from which Bill watched, the blue globe close behind them. When one of them stumbled over a block of lava and fell sprawling headlong on the sand, the other gray creature stopped to help it. The blue globe stopped, too, hanging still twenty feet above the red sand, waited for them to rise and run desperately on again.

Bill felt a quick flood of sympathy for the gray creatures. One had stopped to help the other. That meant that they felt affection. And the globe had waited for them to run again. It seemed to be baiting them maliciously. Almost he fired the rocket. But his orders had been not to fire unless the ship were discovered.

Now they were not a mile away. Suddenly Bill perceived a tiny, light-gray object grasped close to the breast of one of the gray bipeds. Evidently it was a young one, in the arms of its mother. The other creature seemed a male. It was the mother that had fallen.

They came on toward the cliff.

They were very clearly in view, and not five hundred yards below, when the female fell again. The male stopped to aid her, and the globe poised itself above them, waited. The mother seemed unable to rise. The other creature lifted her, and she fell limply back.

As if in rage, the gray male sprang toward the blue globe, crouching.

A tiny purple spark leapt from it. A flash of violet fire enveloped him. He was flung twisted and sprawling to the ground. Burned and torn and bleeding, he drew himself to all fours, and crept on toward the blue globe.

Suddenly the sphere dropped to the ground. A round panel swung open in its side—it was turned from Bill, so that he could not see within. Green things crept out. They were creatures like the one he had seen in the Mexican desert—a cluster of slender, flexible green tentacles, with suction disks, an insignificant green body, and three malevolent purple eyes, at the ends of foot-long stalks.

There were three of the things.

The creeping male flung himself madly upon one of them. It coiled itself about him; suction disks fastened themselves against his skin. For a time he writhed and struggled, fighting in agony against the squeezing green coils. Then he was still.

One of the things grasped the little gray object in the mother's arms. She fought to shield it, to cover it with her own body. It was torn away from her, hidden in the hideously writhing green coils.

The third of the monsters flung itself upon the mother, wrapping snake-like tentacles about her, dragging her struggling body down shuddering and writhing in agony while the blood of life was sucked from it.

Bill watched, silent and trembling with horror.

"The things chased them—for fun!" he muttered fiercely. "Just a sample of what it will be on the earth—if we don't stop 'em."

Presently the green monsters left their victims—which were now mere shriveled husks. They dragged themselves back into the blue globe, which rose swiftly into the air. The round panel had closed.

From his station on the cliff, Bill watched the thing through the telescope sight of the rocket, keeping the cross hairs upon it. It came up to his own level—above it. Suddenly it paused. He was sure that the things in it had seen the *Red Rover*.

Quickly, he pressed a little nickeled lever. A soft whir came from the rocket tube. He pressed the red button. The torpedo leapt forward, with the white rays driving back. The empty shell was flung back in Bill's hand.

A great burst of vivid orange flame enveloped the cobalt globe. It disintegrated into a rain of white metal fragments.

"Take that, damn you!" he muttered in fierce satisfaction.

"Globe brought down successfully," he flashed. "Evidently it had sighted us. Green Martians from it had killed gray bipeds. May I inspect remains?"

"You may," permission was flashed back from the Prince. "But be absent not over half an hour."

In a moment another message came. "All lookouts be doubly alert. Globe may be searched for. Miners making good progress. We can leave by sunset. Courage! ——The Prince."

STRAPPING the remaining rocket torpedo to his shoulders, and thrusting his ray pistol ready in his belt, Bill walked back along the brink of the precipice until he saw a comparatively easy way to the red plain below, and scrambled over the rim. Erosion of untold

ages had left cracks and irregularities in the rock. Because of the slighter gravity of Mars, it was a simple feat to support his weight with the grip of his fingers on a ledge. In five minutes he had clambered down to the bank of talus. Hurriedly he scrambled down over great fallen boulders, panting and gasping for breath in the thin air.

He reached the red sand of the plain—it was worn by winds of ages into an impalpable scarlet dust, that rose in a thin, murky cloud about him, and settled in a blood-colored stain upon his perspiring limbs. The dry dust yielded beneath his feet as he made his way toward the silent gray bodies, making his progress most difficult.

Almost exhausted, he reached the gray creatures, examined them. They were far different from human beings, despite obvious similarities. Each of their "hands" had but three clawed digits; a curious, disk-like appendage took the place of the nose. In skeletel structure they were far different from *homo sapiens*.

Wearily Bill trudged back to the towering red cliff, red dust swirling up about him. He was oddly exhausted by his exertions, trifling as they had been. The murky red dust he inhaled was irritating to his nostrils; he choked and sneezed. Sweat ran in muddy red streams from his body, and he was suddenly very thirsty.

All the top of the red granite plateau—it was evidently the stone heart of an ancient mountain—was hidden from him. He could see nothing of the *Red Rover* or any of her crew. He could see no living thing.

The flat plain of red dust lay about him, curving below a near horizon. Loose dust sucked at his feet, rose about him in a suffocating saffron cloud. The sun, a little crimson globe in a blue-black sky, shone blisteringly. The sky was soberly dark, cold and hostile. In alarmed haste, he struggled toward the grim line of high, red cliffs.

Then he saw a round white object in the red sand.

Pausing to gasp for breath and to rub the sweat and red mud from his forehead, he kicked at it curiously. A sun-bleached human skull rolled out of the scarlet dust. He knew at once that it was human, not a skull of a creature like the gray things behind him on the sand.

With the unpleasant feeling that he was opening the forbidden book of some forgotten tragedy, he fell to his knees in the dust, and scooped about with his fingers. His right had closed upon a man's thigh bone. His left caught in a rotten leather belt, that pulled a human vertebra out of the dust. The belt had a tarnished silver buckle, and he looked at it with a gasp.

It bore an elaborate initial "E."

"E!" he muttered. "Envers! He got to Mars. And died here. Trying to get to the mountain, I guess. Lord! what a death! A man all alone, in the dust and the sun. A strange world. Strange monsters."

The loneliness of the red desert, the mystery of it, and its alien spirit, wrapped itself about him like a mantle of fear. He staggered to his feet, and set off at a stumbling run through the sand toward the cliff. But in a moment he paused.

"He might have left something!" he muttered.

He turned, and plodded back to where he had left the skull and the rotted belt, and dug again with his fingers. He found the rest of the skeleton, even bits of hair, clothing and human skin, preserved in the dry dust. He found an empty canteen, a rusty pocketknife, buttons, coins, and a ray pistol that was burned out.

Then his plowing fingers brought up a little black book from the dust.

It was Envers' diary.

Most of it was still legible. It is available in printed form today, and gives a detailed account of the tragic venture. The hopeful starting from earth. The dangers and discouragements of the voyage. A mutiny; half the crew killed. The thrill of landing on a new planet. The attack of the blue globes. How they took the ship, carried their prisoners to the pens, where they tried to use them to breed a new variety of domestic animals. Envers' escape, his desperate attempt to find the ship where they had landed in the desert.

Bill did not read it all then. He took time to read only that last tragic entry.

"Water all gone. See now I will never reach mountain where I landed. Probably they have moved sunship anyhow. Might have been better to have stayed in the pen. Food and water there. . . . But how could God create such things? So hideous, so malignant! I pray they will not use my ship to go to earth. I hoped to find and destroy it. But it is too late."

Thick red dust swirled up in Bill's face. He tried to breathe, choked and sneezed and strangled. Looking up from the yellowed pages of the dead explorer's note-book, he saw great clouds of red dust hiding the darkly blue sky in the east. It seemed almost that a colossal red-yellowed cylinder was being rolled swiftly upon him from eastward:

A dust-storm was upon him! One of the terrific dust-storms of Mars, so fierce that they are visible to astronomers across forty million miles of space.

Clutching the faded note-book, he ran across the sand again, toward the red cliffs. The wind howled behind him, overtook him and came screaming about his ears. Red dust fogged chokingly about his head. The line of cliffs before him vanished in a murky red haze. The wind blew swiftly, yet it was thin, exerting little force. The dusty air became an acrid fluid, choking, unbreathable.

Blindly, he staggered on, toward the rocks. He reached them, fought his way up the bank of talus, scrambling over gigantic blocks of lava. The base of the cliff was before him, a massive, perpendicular wall, rising out of sight in red haze. He skirted it, saw a climbable chimney, scrambled up.

At last he drew himself over the top, and lay flat. Scarlet dust-clouds swirled about him: he could not see twenty yards. He made no attempt to find the *Red Rover;* he knew he could not locate it in the dust.

HOURS passed as he lay there, blinded, suffocating, feeling the hot misery of acrid dust and perspiration caked in a drying mud upon his skin. Thin winds screamed about the rocks, hot as a furnace-blast. He leveled his torpedo, tried to watch. But he could see only a murky wall of red, with the sun biting through it like a tiny, round blood-ruby.

The red sun had been near the zenith. Slowly it crept down, toward an unseen horizon. It alone gave him an idea of direction, and of the passage of time. Then it, too, vanished in the dust.

Suddenly the wind was still. The dust settled slowly. In half an hour the red sun came into view again, just above the red western horizon. Objects about the mile-long plateau began to take shape. The Red Rover still lay where she had been, in the center. Men were

still busily at work at the mining machinery—they had struggled on through the storm.

"All lookouts signal reports," the Prince flashed from the ship.

"Found Envers' body and brought his diary," Bill flashed when it came his turn.

"Now preparing to depart," came from the Prince. "Getting apparatus aboard. Have the required cerium. Return signal will be fired soon."

Bill watched the dusty sky, over whose formerly dark-blue face the storm had drawn a yellowish haze. In a few minutes he saw a blue globe. Then another, and a third. They were far toward the southeast, drifting high and fast through the saffron haze. It seemed that they were searching out the route over which the globe that he had brought down must have come.

"Three globe-ships in sight," he signalled. "Approaching us."

Some of the other lookouts had evidently seen them, for he saw the flicker of other ray pistols across the plateau.

Without preamble, the red signal rocket was fired. Bill heard the report of it—sharp and thin in the rare atmosphere. He saw the livid scarlet flare.

He got to his feet, shouldered the heavy rocket tube, and ran stumbling back to the *Red Rover*. He saw other men running; saw men struggling to get the mining machinery back on the ship.

Looking back, he saw the three blue globes swimming swiftly nearer. Then he saw others, a full score of them. They were far off, tiny circles of blue in the saffron sky. They seemed to be rapidly flying toward the *Red Rover*.

He looked expectantly northward, toward the end of the plateau to which Paula had gone. He saw nothing of her. She was not returning in answer to the signal rocket.

He was utterly exhausted when he reached the sunship, panting, gasping for the thin air. The others were all like himself, caked with dried red mud, gasping asthmatically from exertion and excitement. Men were struggling to get pieces of heavy machinery aboard the flier—vitalium power generators that had been used to heat the furnaces, and even a motor ray tube that had been borrowed from the ship's power plant for emergency use in the improvised smelter.

The Prince and Dr. Trainor were laboring furiously over an odd piece of apparatus. On the red sand beside the silver sunship, they had set up a tripod on which was mounted a curious glistening device. There were lenses, prisms, condensers, mirrors. The core of it seemed to be a strange vacuum tube—which had an electrode of cerium, surrounded with a queer vitalium grid. A tiny filament was glowing in it; and the induction coil which powered the tube, fed by vitalium batteries, was buzzing incessantly.

"Better get aboard, and off!" Bill cried. "No use to lose our lives, our chance to save the world—just for a little mining machinery."

The Prince looked up in a moment, leaving the queer little device to Dr. Trainor. "Look at the Martian ships!" he cried, sweeping out an arm. "Must be thirty in sight, swarming up like flies. We couldn't get away. And against those purple atomic bombs, the torpedoes wouldn't have a chance. Besides, we have some of the ship's machinery out here. Some generators, and a ray tube."

Bill looked up, saw the swarming blue globes, circling above them in the saffron sky, some of them not a mile above. He shrugged hopelessly, then looked anxiously off to the north again, scanning the red plateau.

"Paula! What's become of her?" he demanded.

"Paula? Is she gone?" The Prince turned from the tripod, looked around suddenly. "Paula! What could have happened to her?"

"A broken heart has happened to her," Bill told him.

"You think—you think——" stammered the Prince. There was sudden alarm in his dark eyes, and a great tender longing. His bitterly cynical smile was gone.

"Bill, she can't be gone!" he cried, almost in agony.

"You know she was on lookout duty at the north end of the plateau. She hasn't come back."

"I've got to find her!"

"What is it to you? I thought you didn't care!" Bill was stern.

"I thought I didn't, except as a friend. But I was wrong. If she's gone, Bill—it will kill me!"

The Prince spun about with abrupt decision.

"Get everything aboard, and fit the ship to take off, as soon as possible," he ordered. "Dr. Trainor is in command. Give him any help he needs. Brand, test everything when the tube is replaced; keep the ship ready to fly." He turned swiftly to Trainor, who still worked deftly over the glittering little machine on the tripod. "Doc, you can operate that by yourself, as well as if I were here. Do your best—for mankind! I'm going to find your daughter."

Trainor nodded in silent assent, his fingers busy.

The Prince, sticking a ray pistol in his belt, set off at a desperate run toward the north end of the plateau. After a moment's hesitation, Bill staggered along behind him, still carrying the rocket torpedo strapped to his back.

It was only half a mile to the end of the plateau. In a few minutes the Prince was there. Bill staggered up just as he was reading a few scrawled words on a scrap of paper that he had found fastened to a boulder where Paula had been stationed.

"To the Prince of Space" it ran. "I can't go on. You must know that I love you—desperately. It was maddening to be with you, to know that you don't care. I know the story of your life, know that you can never care for me. The red dust is blowing now, and I am going down in the desert to die. Please don't look for me—it will do no good. Pardon me for writing this, but I wanted you to know—why I am going. Because I love you. Paula."

CHAPTER VIII

The Vitomaton

"I LOVE Paula!" cried the Prince. "It happened all at once—when you said she was gone. Like a burst of light. Yet it must have been growing for weeks. It was getting so I couldn't work in the lab, unless she was there. God! It must have been hard for her. I was fighting it; I tried to hide what I was beginning to feel, tried to treat her as if she were a man. Now—she's gone!"

Bill looked back to the *Red Rover*, half a mile behind them. She lay still, burnished silver cylinder on the red sand. He could see Trainor beside her, still working over the curious little device on the tripod. All the others had gone aboard. And a score of blue globe-

ships, like little sapphire moons, were circling a few thousand feet above, drifting around and around, with a slow gliding motion, like buzzards circling over their carrion-prey.

The Prince had buried his face in his hands, standing in an attitude of utter dejection.

Bill turned, looked over the red flat sand of the Martian desert. Far below, leading toward the near horizon, he saw a winding line of foot-prints, half obliterated by the recent dust-storm. Far away they vanished below the blue-black sky.

"Her tracks," he said, pointing.

"Tracks!" the Prince looked up, eager, hopeful determination flashing in his dark eyes. "Then we can follow! It may not be too late!

He ran toward the edge of the cliff.

Bill clutched his sleeve. "Wait! Think what you're doing, man! We're fighting to save the world. You can't run off that way! Anyhow, the sun is low. It is getting cool already. In two minutes after the sun goes down it will be cold as the devil! You'll die in the desert!"

The Prince tugged away. "Hang the world! If you knew the way I feel about Paula—Lord, what a fool I've been! To drive her to this!"

Agony was written on his dark face; he bit his thin lip until blood oozed out and mingled indistinguishably with the red grime on his face. "Anyhow, the *vitomaton* is finished. Trainor can use it as well as I. I've got to find Paula—or die trying."

He started toward the brink of the precipice again. After the hesitation of a moment, Bill started after him. The Prince turned suddenly.

"What the devil are you doing here?"

"Well," said Bill, "the *Red Rover* is not a very attractive haven of refuge, with all those Martian ships flying around it. And I have come to think a good deal of Miss Paula. I'd like to help you find her."

'Don't come," said the Prince. "Probably it is death—"

"I'm not exactly an infant. I've been in tight places before. I've even an idea of what it would be like to die at night in this desert—I found the bones of a man in the dust today. But I want to go."

The Prince grasped Bill's hand. For a moment a tender smile of friendship came over the drawn mask of mingled despair and determination upon his lean face.

Presently the two of them found an inclining ledge that ran down the face of the red granite cliff, and scrambled along to the flat plain of acrid dust below. In desperate haste they plodded gasping along, following the scant traces of Paula's footprints that the storm had left. A hazy red cloud of dust rose about them, stinging their nostrils. They strangled and gasped for breath in the thin, dusty air. Sweaty grime covered them with a red crust.

For a mile they followed the trail. Then Paula had left the sand for a bare ledge of age-worn volcanic rock. The wind had erased what traces she might have left here. They skirted the edge of the ledge, but no prints were visible in the sand. The small red eye of the sun was just above the ocherous western rim of the planet. Their perspiring bodies shivered under the first chill of the frozen Martian night.

"It's no use," Bill muttered, sitting down on a block of time-worn granite, and wiping the red mud from his face. "She's probably been gone for hours. No chance."

"I've got to find her!" the Prince cried, his lean, red-stained face tense with determination. "I'll circle about a little, and see if I can't pick up the trail."

Bill sat on the rock. He looked back at the low dark rim of cliffs, a mile behind, grim and forbidding against the somber, indigo sky. The crimson, melancholy splendor of the Martian sunset was fading in the west.

The silver sunship was out of sight behind the cliffs. But he could see the little blue globes, like spinning moons of sapphire, circling watchfully above it. They were lower now, some of them not a thousand feet above the hidden sunship.

Abruptly, one of them was enveloped in a vivid flare of orange light. Its blue gleam flickering out, and it fell in fragments of twisted white metal. Bill knew that it had been struck with a rocket torpedo.

The reply was quick and terrible. Slender, dazzling shafts of incandescent whiteness stabbed down toward the ship, each of them driving before it a tiny bright spark of purple fire, coruscating, iridescent.

They were the atomic bombs, Bill knew. A dozen of them must have been fired, from as many ships. In a few seconds he heard the reports of their explosions—in the thin, still air, they were mere sharp cracks, like pistol reports. They exploded below the line of his vision. No more torpedoes were fired from the unseen sunship. Bill could see nothing of it; but he was sure that it had been destroyed.

He heard the Prince's shout, thin and high in the rare atmosphere. It came from a hundred yards beyond him.

"I've found the trail."

Bill got up, trudged across to follow him. The Prince waited, impatiently, but gasping for breath. Just half of the red disk of the sun was visible in the indigo sky above the straight horizon, and a chill breeze blew upon them.

"I guess that ends the chance for the world!" Bill gasped.

"I suppose so. Some fool must have shot that torpedo off, contrary to orders. The *vitomaton* might have saved us, if Trainor had had a chance to use it."

They plodded on through the dust, straining their eyes to follow the half-obliterated trail in the fading light. It grew colder very swiftly, for Mars has no such thick blanket atmosphere to hold the heat of day as has the earth.

Twilight was short. Splendid wings of somber crimson flame hung for a moment in the west. A brief golden glow shone where it had been. Then the sky was dark, and the million stars were standing out in cold, motionless majesty—scintillantly bright, unfeeling watchers of the drama in the desert.

Bill felt tingling cold envelope his limbs. The sweat and mud upon him seemed freezing. He saw the white glitter of frost appear suddenly upon his garments, even upon the red dust. The thin air he breathed seemed to freeze his lungs. He trembled. His skin became a stiff, numb, painful garment, hindering his movements. The Prince staggered on ahead of him, a vague dark shadow in the night, crying out at intervals in a queer, strained voice.

BILL stopped, looked back, shivering and miserable "No use to go on," he muttered. "No use." He stood still, vainly flapping his numb arms against his sides. A vivid picture came to him—a naked, staring,

sun-bleached skull, lying in the red dust. "Bones in the dust," he muttered. "Bones in the dust. Envers' bones. And Paula's, The Prince's. Mine."

He saw something that made him stare, oblivious of the cold.

The red cliff had become a low dark line, below the star-studded sky. The score of little cobalt moons were still drifting around and around, in endless circles, watching, waiting. They were bright among the stars.

A little green cloud came up into view, above the dark rim of the cliff. A little spinning wisp of greenish vapor. A tiny sphere of swirling radiance. It shone with the clear lucent green of spring, of all verdure, of life itself. It spun, and it shone with live green light.

With inconceivable speed, it darted upward. It struck one of the blue globes. A sparkling mist of dancing emerald atoms flowed over the azure sphere, dissolved it, melted it away.

Bill rubbed his eyes. Where the sapphire ship had been was now only a swirling mass of green mist, a cloud of twinkling emerald particles, shining with a supernal viridescent radiance that somehow suggested *life*.

Abruptly as the first tiny wisp of green luminescence had appeared, this whirling cloud exploded. It burst into scores of tiny globes of sparkling, vibrant atoms. The green cloud had eaten and grown. Now it was reproducing itself like a living thing that feeds and grows and sends off spores.

And each of the little blobs of viridity flew to an azure sphere. It seemed to Bill as if the blue ships drew them—or as if the green globules of swirling mist were *alive*, seeking food.

In an instant, each swirling spiral of emerald mist had struck a blue globe. Vibrant green haze spread over every sphere. And the spheres melted, faded, vanished in clouds of swirling viridescent vapor.

It all happened very suddenly. It was hardly a second, Bill thought, after the first of the swirling green blobs had appeared, before the last of the Martian fliers had become a mass of incandescent mist. Then, suddenly as they had come, the green spirals vanished. They were blotted out.

The stars shone cold and brilliant, in many-colored splendor, above the dark line of the cliffs. The Martian ships were gone.

"The *vitomaton!*" Bill muttered. "The Prince said something about the *vitomaton*. A new weapon, using the force of life. And the green was like a living thing, consuming the spheres!"

Suddenly he felt the bitter cold again. He moved, and his garments were stiff with frost. The cold had numbed his limbs—most of the pain had gone. He felt a curious lightness, an odd sense of relief, of freedom—and a delicious, alarming desire for sleep. But leaden pain of cold still lurked underneath, dull, throbbing.

"Move! Move!" he muttered through cold-stiffened lips. "Move! Keep warm!"

He stumbled across the dust in the direction the Prince had taken. The cold tugged at him. His breath froze in swirls of ice. With all his will he fought the deadly desire for sleep.

He had not gone far when he came upon a dark shape in the night. It was the Prince, carrying Paula in his arms.

"I found her lying on the sand," he gasped to Bill. "She was awake. She was glad—forgave me—happy now."

The Prince was exhausted, struggling through the sand, burdened with the girl in his arms.

"Why go on?" Bill forced the words through his freezing face. "Never make it. They shot atomic bombs at *Red Rover*. Then something happened to them. Green light."

"The *vitomaton!*" gasped the Prince. "Vortex of spinning, disintegrated atoms. Controlled by wireless power. Alive! Consumes all matter! Disintegrates it into atomic nothingness!"

He staggered on toward the dark line of cliffs, clasping the inert form of the girl to his body.

"But Paula! I love her. I must carry her to the ship. It is my fault. We must get to the ship."

BILL struggled along beside him. "Too far!" he muttered. "Miles, in the night. In the cold. We'll never——"

He stopped, with a thin, rasping cry.

Before him, above the narrow black line of the cliffs, a slender bar of luminescent silver had shot up into view. It was the slim, tapering cylinder of the *Red* Rover, with her twelve rear motor rays driving white and dazzling against the mountain she was leaving. The sunship, unharmed, driving upward into space!

"My God!" Bill screamed. "Leaving us!" He staggered forward, a pitiful, trembling figure, encased in stiff, frost-covered garments. He waved his arms, shouted. It was vain, almost ludicrous.

The Prince had stopped, still holding Paula in his arms.

"They think—Martians got us!" he called in a queer voice. "Stop them! Fire torpedo—at boulder. They will see!"

Bill heard the gasping voice. He unfastened the heavy tube that he still carried on his shoulder, leveled it before him. With numb, trembling fingers, he tried to move the levers. His fingers seemed frozen; they would not move. Tears burst from his eyes, freezing on his cheeks. He stood holding the heavy tube in his arms, sobbing like a baby.

Above them, the slender white cylinder of the *Red Rover* was driving out into star-gemmed space, dazzling opalescent rays shooting back at the dark mountain behind her.

"They go," Bill babbled. "They think we are dead. Have not time to wait. Go to fight for world."

He collapsed in a trembling heap upon the loose, frosty sand.

The Prince had suddenly laid Paula on the ground, was beside him.

"Lift the rocket," he gasped. "Aim. I will fire."

Bill raised the heavy tube mechanically, sighted through the telescope. His trembling was so violent that he could hardly hold it upon the rock. The Prince tried with his fingers to move the lever, in vain. Then he bent, pressed his chin against it. It slipped, cut a red gash in his skin. Again he tried, and the whir of the motor responded. He got his chin upon the little red button, pressed it. The empty shell drove back, fell from Bill's numbed hands and clattered on the sand.

The torpedo struck with a burst of orange light.

The Prince picked up Paula again, clasped her chilled body to him. Bill watched the *Red Rover*. Suddenly he voiced a glad, incoherent cry. The white rays that drove her upward were snapped out. The slim silver ship swung about, came down on a long swift glide.

In a moment, it seemed, she swept over them, with a searchlight sweeping the red sand. The white beam found the three. Quickly the ship dropped beside them. Grotesque figures in vacuum suits leapt from the air-lock.

In a few seconds they were abroad, in warmth and light. Hot, moist air hissed into the lock about them, and they could breathe easily again. The sizzling of the air through the valves was the last impression of which Bill was conscious, until he found himself waking up in a comfortable bed, feeling warm and very hungry. Captain Brand was standing with his blue eyes peering through the door.

"Just looked in to see you as I was going on duty, Bill," he said. "Doctor Trainor says you're all right now. The Prince and Paula are too. You were all rather chilled, but nothing was seriously frozen. Lucky you shot off the rocket. We had given up hope for you—didn't dare stay.

"Funny change has come over the Prince. He's been up a good while, sitting by Paula's bed. How's that for the misogynist—the hermit outlaw of space? Well, come on up to the bridge when you've had some breakfast. The battle with Mars is going to be fought out in the next few hours. Ought to be something interesting to see."

Having delivered his broadside of information so fast that the sleepy Bill could hardly absorb it, the bluff old space-captain withdrew his head, and went on.

An hour later Bill entered the bridge-room.

Gazing through the vitrolite panels, he saw the familiar aspect of interplanetary space—hard, brilliant points of many-colored light scintillating in a silver-dusted void of utter blackness. The flaming, red-winged sun was small and far distant. Earth was a huge green star, glowing with indescribably beautiful liquid emerald brilliance; the moon a silver speck beside it.

The grim red disk of Mars filled a great space in the heavens. Bill looked for a little blue dot that had been visible upon the red planet for so long—the tiny azure circle that he had first seen from the telescope in Trainor's Tower. He found the spot where it should be, on the upper limb of the planet. But it was gone.

"The thing has left Mars," Captain Brand told him. "It has set out on its mission of doom to Earth!"

"What is it?"

"It is armored with one of their blue vibratory screens. What hellish contrivances of war it has in it, and what demoniac millions of Martians, no one knows. It is enormous, more than a mile in diameter."

"Can we do anything?"

"I hardly see how we can do anything. But we can try. Trainor and the Prince are coming with their *vitomaton*."

"Say, didn't they shoot their atomic bombs at the ship last night?" Bill asked. "It was out of sight, but I imagined they had wrecked it."

"One of the lookouts who was late getting back brought down one of their globes with a rocket. They fired a lot of the purple bombs to scare us. But I think they meant to take us alive. In the interest of their science, I suppose. And Dr. Trainor got the *vitomaton* ready before they had done anything."

Bill was peering out into the star-strewn ebon gulf. Captain Brand pointed. He saw a tiny blue globe, swimming among the stars.

"There's the infernal thing! Carrying its cargo of horror to our earth!"

In a few moments Dr. Trainor, the Prince, and Paula came one by one up the ladder to the bridge. Trainor carried the tripod; the Prince brought a little black case which contained the strange vacuum tube with the cerium electrode, and its various accessories; Paula had a little calculating machine and a book of mathematical tables.

Trainor and the Prince set up the tripod in the center of the room, and mounted the little black case upon it. The apparatus looked not very different from a small camera. Working with cool, brisk efficiency, Paula began operating the calculating machine, taking numbers from the book, and calling out the results to the Prince, who was setting numerous small dials on the apparatus.

Dr. Trainor peered through a compact little telescope which was evidently an auxiliary part of the apparatus, training the machine on the tiny blue disk that was the messenger of doom from Mars. From time to time he called out numbers which seemed to go into Paula's calculations.

Looking curiously at Paula and the Prince, Bill could see no sign of an understanding between them. Both seemed absorbed in the problem before them. They were impersonal as any two collaborating scientists.

At last Dr. Trainor raised his eyes from the little telescope, and the Prince paused, with his fingers on a tiny switch. The induction coil, in the circuit of a powerful vitalium generator, was buzzing monotonously, while purple fire leapt between its terminals. Paula was still efficiently busy over the little calculating machine, pressing its keys while the motors whirred inside it.

"WE'RE all ready," Trainor announced, "as soon as Paula finishes the integration." He turned to Bill and Captain Brand, who were eying the apparatus with intense interest. "If you will look inside this electron tube, when the Prince closes the switch, you will see a tiny green spark come into being. Just at the focus of the rays from the cerium electrode, inside the vitalium helix grid.

"That green spark is a living thing!"

"It has in it the vital essence. It can consume matter—feed itself. It can grow. It can divide, reproduce itself. It responds to stimuli—it obeys the signals we send from this directional beam transmitter." He tapped an insignificant little drum.

"And it ceases to be, when we cut off the power.

"It is a living thing, that eats. And it is more destructive than anything else that eats, for it destroys the atoms that it takes into itself. It resolves them into pure vibratory energy, into free protons and electrons."

Paula called out another number, in her soft, husky voice. The Prince swiftly set a last dial, pressed a tiny lever. Bill, peering through the thin walls of a little electron tube, saw a filament light, saw the thin cerium disk grow incandescent, apparently under cathode bombardment. Then he saw a tiny green spark come into being, in a fine helix of gleaming vitalium wire. For a little time it hung there, swinging back and forth a little, growing slowly.

Deliberately, one by one, the Prince depressed keys on a black panel behind the tube. The little green spark wavered. Suddenly it shot forward, out through the wall of the tube. It swam uncertainly through the air in the room, growing until it was large as a marble. The Prince flicked down another key, and it darted out through a vitrolite panel, towards the blue globe from Mars.

It had cut a little round hole in the transparent crystal, a hole the size of a man's finger. The matter in it had vanished utterly. And the little viridescent cloud of curdled light that hung outside had grown again. It was as large as a man's fist—a tiny, whirling spiral of vibrant emerald particles.

Air hissed through the little hole, forming a frozen, misty cloud outside. Captain Brand promptly produced a little disk of soft rubber, placed it against the opening. Air-pressure held it tight, sealing the orifice.

The Prince pressed another key, the little swirling green sphere was whisked away—it vanished. The Prince stood intent, fingers on the banks of keys, eyes on red pointers that spun dizzily on tiny dials. Another key clicked down suddenly. He moved a dial, and looked expectantly out through the vitrolite panel.

Bill saw the green film run suddenly over the tiny blue globe floating among the stars. The azure sphere seemed to melt away, to dissolve into sparkling green radiance. In a moment, where the great blue ship had been, was only a spinning spiral of glistening viridescence.

"Look at Mars!" cried the Prince. "This is a challenge. If they want peace, they shall have it. If they want war, they shall feel the power of the *vitomaton!*"

Bill turned dazedly to look at the broad disk of the red planet. It was not relatively very far away. He could see the glistening white spot that was the north polar cap, the vast ocherous deserts, the dark equatorial markings, the green-black lines of the canals. For all the grimness of its somber, crimson color, it was very brilliant against the darkness of the spangled void.

An amazing change came swiftly over Mars.

A bluish tinge flowed over orange-red deserts. A thin blue mist seemed to have come suddenly into the atmosphere of the planet. It darkened, became abruptly solid. A wall of blue hid the red world. Mars became a colossal globe. Her surface was as real, as smooth and unbroken, as that of the ship they had just destroyed.

Mars had become a sphere of polished sapphire.

"A wall of vibration, I suppose," said the Prince. "What a science to condemn to destruction!"

Huge globes of purple fire—violet spheres large as the ship they had just destroyed—driven on mighty rays, leapt out from a score of points on the smooth azure armor that covered a world. With incredible speed, they converged toward the *Red Rover*.

"Atomic bombs with a vengeance!" cried the Prince. "One of those would throw the earth out of its orbit, into the sun." He turned briskly to Paula. "Quick now! Integrations for the planet!"

She sprang to the calculating machine; slim fingers flew over the keys. Trainor swung his apparatus toward the smooth azure ball that Mars had become, peered through his telescope, called out a series of numbers to Paula. Quickly she finished, gave her results to the Prince.

He bent over the banks of keys again.

Bill watched the enormous blue globe of Mars in fascinated horror, followed the huge, luminescent red-purple atomic bombs, that were hurtling out toward them, driven on broad white rays.

"An amazing amount of power in those atomic bombs," Dr. Trainor commented, his mild eyes bright with scientific enthusiasm. "I doubt that space itself is strong enough to hold up under their explosion. If they hit us, I imagine it will break down the continuum, blow us out of the universe altogether, out of space and time!"

Bill was looking at the whirling green spiral that hung where the Martian flier had been. He saw it move suddenly, dart across the star-dusted darkness of space. It plunged straight for the blue ball of Mars, struck it. A viridescent fog ran quickly over the enormous azure globe.

Mars melted away.

The planet dissolved in a huge, madly spinning cloud of brilliant green mist that shone with an odd light—with a light of *life!* A world faded into a nebulous spiral of green. Mars became a spinning cloud of dust as if of malachite.

A tiny lever flicked over, under the Prince's fingers. And the green light went out.

Where Mars had been was nothing! The stars shone through, hot and clear. A machine no larger than a camera had destroyed a world. Bill was dazed, staggered.

Solemnly, almost sadly, the Prince moved a slender, tanned hand across his brow. "A terrible thing," he said slowly. "It is a terrible thing to destroy a world. A world that had been eons in the making, and that might have changed the history of the cosmos. . . . But they voted for war. We had no choice."

He shook his head suddenly, and smiled. "It's all over. The great mission of my life—completed. Doctor I want you to pack the *vitomaton* very carefully, and lock it up in our best safe, and try to forget the combination. A great invention. But I hope we never need to use it again."

Then the Prince of Space did a thing that was amazing to most of his associates as the destruction of Mars had been. He walked quickly to Paula Trainor, and put his arms around her. He slowly tilted up her elfin face, where the golden eyes were laughing now, with a great, tender light of gladness shining in them. He bent, and kissed her warm red lips, with a hungry eagerness that was almost boyish.

A happy smile was dancing in his eyes when he looked up at the astounded Captain Brand and the others.

"Allow me," he said, "to present the Princess of Space!"

Some months later, when Bill was landed on Trainor's Tower, on a visit from his new home in the City of Space, he found that the destruction of Mars had created an enormous sensation. Astronomers were manfully inventing fantastic hypotheses to explain why the red planet had first turned blue, then green, and finally vanished utterly. The sunships of the Moon Patrol were still hunting merrily for the Prince of Space. Since the loss of the *Triton's* treasure, the reward for his capture had been increased to twenty-five million eagles.

THE END

Tanks Under *the* Sea

By Harl Vincent

Author of "Barton's Island," "Callisto at War," etc.

PERHAPS it is because radium is such a rare metal that so many of its beneficial aspects are developed. But it has already been discovered in several instances how harmful this marvelous healing product can be. Imagine that instead of the people of the legendary city of Atlantis, with their progressive benevolence, an entirely different sort of beings had landed on a rich bed of radium ore with its possibilities for evil rather than for good. Harl Vincent can generally be counted on for the unusual.

He amply justifies the faith of his readers with this yarn.

AFTER having diverged more than seven hundred miles off her course to avoid a storm, the seaplane *Challenger* was nearing her goal. If Pete Caldwell's reckoning was correct and if their gasoline held out, they should come down in Auckland harbor by sundown.

At best it was a long tough flight from Valparaiso to the New Zealand city. This one had been brutal—treacherous flying weather most of the way—and both occupants of the plane's cabin were tense and irritable under the strain. Their radio had gone dead and the inductor compass acted erratically.

"Hey, Pete!" Ben Walton shouted from the rear compartment where the emergency gas tanks were located, "I make it just fifty gallons. We'll never get there."

"You're crazy," yelled the pilot, eyes straight ahead. "It's less than three hundred miles."

"Yeah—maybe—if that bum compass isn't fooling you."

"Oh, shut up! I know what I'm doing. What's the matter with you—scared?"

Ordinarily this would have resulted in a prolonged argument, for Pete and Ben were that sort of friends. But the stocky young mechanic had come forward and was standing at Pete's side, gazing intently toward the dark waters some five hundred feet beneath them.

"Pete!" he exclaimed, pointing a stubby forefinger, "Take a squint out there. What in the devil do you suppose that is?"

The pilot turned his head with a shrug of his broad shoulders. He wasn't particularly interested in anything they might see in this God-forsaken part of the Pacific. But he gasped when he saw the object Ben had pointed out.

"Looks like a big silver tank sticking up out of the water," he said. "A young oil tank, painted with aluminum, so help me!"

He banked sharply and swung the ship over for a closer view. They circled the object and dropped to two hundred feet. It was some sort of a cylindrical vessel, standing vertically to a height of perhaps thirty feet from the placid waters and apparently fixed firmly as if it rose from the bottom.

"Now what do you know about that?" Ben marveled. "Who do you suppose built such a thing way out here?"

As if in answer to his question, a circular lid opened in the flat top of the cylinder and a man's head was poked through. The roar of their motor attracted his attention and he looked skyward, as amazed as they.

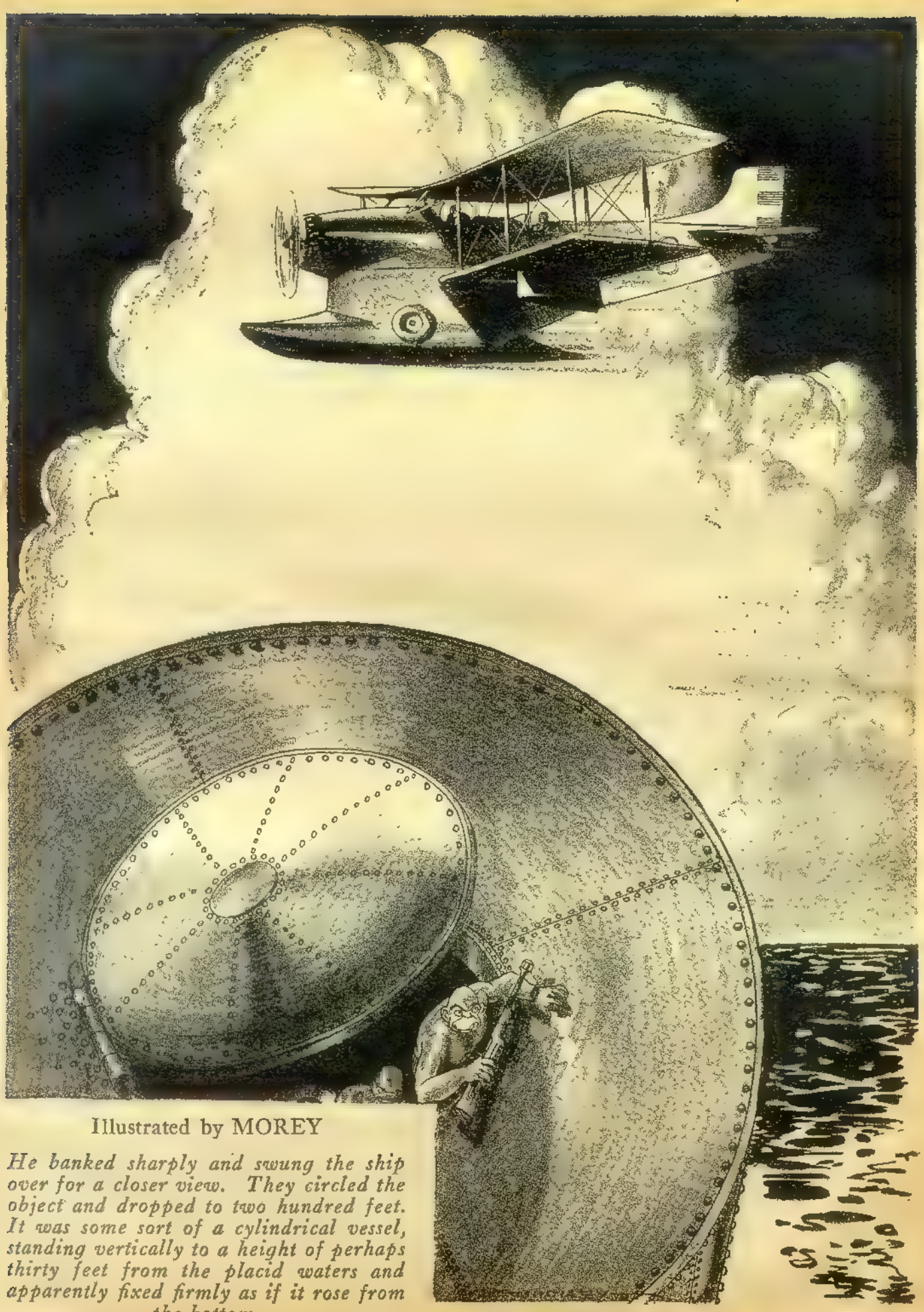
Then it happened; a gleaming weapon in the hands of the stranger, a stabbing pencil of purplish light and the big radial motor in the nose of their ship quit cold. The *Challenger* dropped to the surface in an easy glide.

"Hell's bells!" Pete growled, "Now what're we up against?"

"Trouble," Ben grunted. "Sure as shooting. Take a look at the face on that baby!"

"Does look like a tough one, Ben—no fooling. Here—grab a gun for yourself." Pete had taken two automatics from the locker as he spoke.

Others had joined the man on the tank now; squat, deformed creatures all of them. The plane was drifting closer, carried in toward the metal cylinder by freakish currents that seemed to eddy in to its polished sides from all directions. The flat features and baleful glares of the misshapen humans could now be seen plainly. Humans? No, they were hairless apes rather; clad only in breech



Illustrated by MOREY

He banked sharply and swung the ship over for a closer view. They circled the object and dropped to two hundred feet. It was some sort of a cylindrical vessel, standing vertically to a height of perhaps thirty feet from the placid waters and apparently fixed firmly as if it rose from the bottom.

cloths and with pasty white skin like corpses—altogether repulsive.

Pete opened the trapdoor in the cabin roof and both climbed through to the open air. "What's the big idea?" he called out over the narrowing strip of water, "What'd you bring us down for?"

He who seemed to be the leader of the ape-men yelled something in unintelligible gutturals and then turned to converse with his companions. Replicas of the mysterious ray weapon which had been used to bring them down appeared in the hands of each of the dwarfs.

"They're too many for us," Ben whispered. "What'll we do?"

"Wait and see what they do. We'll shoot it out with them if we have to, but what's the use of getting ourselves croaked if we can talk ourselves out of it?"

"Who's going to talk that jabber of theirs?"

"Maybe there is somebody down below in that thing we can talk to. Besides, I'm getting curious about it. Like to see the inside of the thing."

"Not me. I'd like to be home—right now."

More of the ape-men had come up through the hatch and there were at least a dozen of them now on the flat top of the cylinder. The plane was almost alongside when a dense cloud of blue vapor spurted forth to meet them. They were completely enveloped in the vile smelling stuff; blinded and coughing. Clammy hands pawed at them in the darkness. Fingers of steel gripped them; strong arms, cold and unyielding as metal bands, pinioned them hand and foot, though they fought desperately to save themselves. Neither dared fire his pistol for fear of hitting the other. They were helpless in the hands of a mysterious enemy.

PETE CALDWELL mused gloomily in the steel-walled cell into which he had been thrown. He was something of an engineer and had served in the undersea forces of the United States in the war of 1938, so the throbbing of the pumps and the rush of water into the ballast tanks told him this was some sort of a submarine into which they had been hauled. A monster, too! Funny, after the war he had sworn he never again would enter one of the damned things—went in for aviation instead and finally wound up as a pilot in the Chile-New Zealand mail service. Swell mess they were in now—Ben and he! Who these long-armed dwarfs were and what they were up to he couldn't even guess. Frisked him of his gun, too, the apes!

The sub had grounded now and a key rattled in the lock of his cell door. A number of the dwarfs appeared and they indicated that he was to follow them. There was nothing to do but to comply.

They followed a long passageway and were joined by others who had Ben in tow. But the ugly, menacing creatures kept the two men apart, as if in fear of a concerted effort against them. Numbers of the ray weapons were in evidence.

Then a door opened and they were prodded into the confines of an airlock with the familiar circular hatches at each end. The devils intended to drown them like rats in a trap! But no—their captors remained with them. One of them was working with the clamps of the outer cover. Could these weird creatures live under water?

They stepped out on solid ground and into a warm and fetid atmosphere. The sub had slipped through a huge airlock into a vast artificially lighted submarine cavern!

"Christopher!" Ben yelled, "Look at 'em, Pete. Hundreds of the pig boats—or tractors, or whatever they are!"

It was true. The great arched cavern was literally crowded with the sub-surface ships. Pete rubbed his eyes in disbelief of what they told him. These subs were tanks! Submarine tanks of shining metal that resembled silver. Stainless steel or chromium plated, probably, to better resist corrosion. Each cigar-shaped body was mounted on huge caterpillar tracks that would enable them to travel on land as well as on the ocean bottom. And there were rudders and fins, the same as any submarine—twin screws astern. The cylinder through which they had entered the one that had brought them was a huge conning tower. On all of them there were torpedo tubes fore and aft; big gun turrets on the superstructure. What terrible engines of destruction!

"Lord!" Pete gasped. "Something goes on here—something rotten in the state of Denmark, all right. And this isn't Denmark by a long way."

They were being hustled along an elevated runway of iron grating now, their captors prodding them with the ray weapons. The cage of a lift awaited them at the end of the runway.

FOR an interminable time, it seemed, they dropped into the bowels of the earth. Then they were in a brightly lighted room where it was ominously quiet and where a square jawed, stern visaged man sat before a broad, glass topped desk. He looked up when they entered and his short cropped, grizzled gray hair brought an exclamation of recognition from Pete.

"André Shevan!" he exclaimed. Chevan—discredited commander-in-chief of the Red forces in the last war, exiled by the Peace Commission. It was impossible!

"Yes, the great Chevan, in person. Surprised?" The supposed exile grinned evilly. He dismissed his malformed minions with a nod.

"Naturally," Pete snarled. "What devilment are you up to now? And why did your gang of imps kidnap us this way?"

"Explaining the devilment can wait, young man. As to the kidnaping, it was quite necessary, I assure you. You saw one of our war vessels and, of a certainty, I could not let you report it to the world. We're not yet ready to show our hand. Besides, I can well use two such accomplished and healthy Americans."

"You mean you'll hold us here—against our will?" Pete was incredulous.

"Of a certainty. Not only that; I shall use you when the time comes to set forth against the Americas. Both of you are war veterans and your experience will be of value to me. Ah, war! It is the spice of life, is it not?"

"War?" Ben echoed Pete's exclamation.

"Exactly. And such a war as you shall see and participate in!"

"Not on your life!" Pete snapped.

"No? You have no alternative, my friend. And you should not object—it is a great honor I am extending. And the pleasure it gives to me that you are Americans! You shall fight your own people."

"You're crazy as a coot!" Pete was contemptuous.

"Am I? Listen boys; I've been working with the Akata—imps you have called them, and apes—for more than ten years while the world at large has thought me banished and safely out of the way on a barren and

deserted island. But—ha! ha!—a substitute languishes in my stead on that so remote island while I, André Chevan, am here. The Akata number more than seven millions. No, don't laugh. They are decended from an intelligent people who migrated to this vast realm under the Pacific more than thirty centuries in the past. A thousand years before the time of your Christ they knew the secret of the transmutation of metals, of the submarine, of the death ray and of atomic disintegration—when the rest of the world was in abysmal ignorance of science. For centuries they've planned a war against the outside world and were well on the way to complete preparation, before I came to organize them and lead them. Now the time is at hand and I, André Chevan am to have my vengeance upon the world that cast me off."

His heavy features became saturnine with the fanaticism that lighted them. Pete and Ben stared at him agape. The man was insane.

"Now we know you're a nut," Pete grated. "Our forts and battle planes'll blow these tanks of yours to kingdom-come, before you've well started."

"Yes? Let me tell you something. Every sub-tank of the more than six hundred is armed with paralyzing rays that will cause your big guns to miss fire and your planes to fall from the air. Have you forgotten how the *Challenger* was brought down? The tanks will crawl up from the depths of the ocean and overrun the Americas at the speed of fifty miles an hour, blasting your cities to ashes with death rays and high explosives, your forests with flame projectors. After America, the world! The Akata will ravage and plunder and kill. They'll take possession. And I shall be king!"

"Ho! A modern Napoleon!" Pete sneered.

Chevan glared an instant, then chuckled, "Well put, young man. Your grasp of the idea is perfect. And now, I have a proposition to make to you and your friend. The Akata are of marvelous intelligence and skill. They are fearless and loyal. But you have seen them—I hardly fancy them as intimates. Rather would I have two such as yourselves for my trusted lieutenants. Join me in this campaign and the world is yours. You'll share with me in the glory and honor and wealth that are to be mine—the power—think of it! It is a chance in a million!"

"Suppose we refuse?" Ben inquired softly.

Pete poked his ribs surreptitiously to silence him.

Chevan was drawing a finger across his own throat meaningly, a malicious leer making an awful mask of his countenance. "One of my Akata guards is expert with the knife," he said, "and eager to use it at my command."

"Give us a week to think it over," Pete said suddenly, bestowing an imperceptible wink on his wrath-filled friend.

Chevan regarded first one and then the other of his captives with keen suspicion, but could discern naught save awed solemnity in their faces.

"I'll do it," he agreed. "Seven days of twenty-four hours. I believe by that time you'll willingly come in. The folly of doing otherwise will be only too apparent to you—after you have seen."

"Meanwhile?" asked Pete.

"You are free to come and go; to check up on my statements. You'll be quartered and fed—and watched closely."

He rang for his servants.

CHEVAN was as good as his word. The two Americans were assigned to luxurious rooms and were served with meals at the commander's own table. They were taken in charge by one of the Akata, a putty-faced creature with feline eyes, who answered to the name of Ongli and was inordinately proud of his ability to converse with them in choppy sentences of broken English. In a surly way he was solicitous of their every want, accompanying them wherever they wished to go and explaining in detail the many wonders of Aka which aroused their curiosity. They went everywhere and saw everything, but always they were trailed by a number of the sullen Akata guards—uncanny creatures whose staring eyes followed their every move and whose ominous mutterings provided a monotonous accompaniment to their every conversation.

Ongli, it seemed, was a leader of his kind and of vastly superior class and influence. His word was law to the guards and amongst the rabble on the moving ways, in the pneumatic tubes, or in workshop or foundry. His badge of authority gained them admission wherever they wished to go. The science of the Akata was at his finger-tips, and he proudly exhibited his knowledge of its most complex secrets.

And Ongli was destined to be a great chief when the new order of things was established in the surface world. Chevan had told him so himself. And was not Chevan a god—mightiest of all earthlings, beneath the surface or above?

Ben was inclined to be argumentative and openly defiant. What sense was there is shamming this way? They'd never join up with this crazy scheme, so why not kick over the traces at once and have it over with? Chevan would have their life blood in the end.

"Shut up, you dumb-bell!" Pete hissed, when they were on their way to one of the chemical laboratories of which Ongli had told them. "Trust me now to dope something out. And you keep your trap shut! We'll have no conversations at all until the time's up. This guy Chevan's clever. He'll get wise in a minute unless we pretend——"

"What's that you say?" Ongli asked suspiciously. And the guards moved in closer at the sound of his voice.

"He doesn't want to go," said Pete, feigning impatience with his partner, "Wants to go in one of your sub-tanks instead."

"That can wait two, three sleeps," Ongli averred, his suspicion allayed. "This more important. It basic. You see."

The guards fell back and Pete glared at his friend warningly. They'd have to be mighty careful.

They had stepped forth on a ledge that skirted the wall of an enormous cavern, a great arched hollow beneath the bed of the Pacific, a cavern such as the eye of man had never beheld. Brilliantly illuminated by the cold blue light the Akata produced so abundantly, it stretched off into the distance where the haze of its humid atmosphere rendered all things invisible. A city lay beneath their feet, a city of tall buildings and broad streets that hummed with activity.

Ongli waved his arm with an all-inclusive gesture. "Oniri," he exclaimed, "First city of Aka. First of main cavern. First of seven hundred cities. Queen city of Aka."

"What?" Pete gasped. "You mean to tell me there are seven hundred cities like this down here? How big is Aka, anyway?"

"I speak true." Ongli drew himself to his full height impressively. "Nine caverns there are. Seven hundred cities. Main cavern a thousand—what you call it—miles long. Yes. It true. And other caverns below. Others to north. One south. Aka a big place."

"I'll say it is!" Pete Caldwell was aghast at the revelation. Somehow he had thought that Chevan was exaggerating when he spoke of the numbers of the Akata. This was a continent in itself, a continent under the sea.

Ben was grouchily silent.

Ongli led them to a niche in the rock wall. Here there was a platform that stretched along the side of a smooth metal groove, the lower half of a cylinder which ended at circular covers set into the walls at either extremity.

"Station of air pressure tube," Ongli explained. "We go twenty miles to laboratory."

There came a rapidly rising hiss, a screech almost, and one of the circular doors popped open to disgorge a bullet-shaped car that came to a stop in the groove beside them. In a moment they were within and the door had clanged shut. There was a roar and the pressure of swift acceleration as the car was shot into that smooth walled tube that led into the unknown distances of that strange submarine realm. Pete looked around the interior curiously. There were no passengers excepting their own party. Ben was staring at the wall, stubbornly refusing to exhibit his amazement. Ongli and the Akata guards had sprawled carelessly on the cushioned seats and were regarding their charges with expressionless fishy eyes.

In less than five minutes the car slowed down and came to a lurching stop. The door clicked open and they stepped out into a duplicate of the station at which they had embarked. Ongli led the way through a narrow passage to the laboratory.

Above them there rose a huge crystal dome which was all that separated them from the tremendous weight of water above. The light of the sun shone through with an eerie blue-green radiance which illuminated the cavern with a sort of sepulchral twilight. In the half light they could make out dim monstrous shapes, huge cylinders and spheres that throbbed with energy from within. Here and there a light glowed over a control board and, in the circle of each, they could make out the stunted figures of Akata workmen engaged in the mysterious tasks occasioned by the operation of the giant machines. At the far end of the long main aisle there arose a shower of brilliant sparks as a stream of molten metal burst forth from a ladle and found its way into a waiting mold. Huge cranes—dim, ghostly monsters high overhead—rumbled ponderously over their tracks and were lost in the gloom.

Here it was, and in hundreds of similar laboratories, that the essentials of life were produced by the Akata. The ingenuity and resourcefulness of the repulsive inhabitants, as revealed by Ongli, were marvelous to contemplate—and fearsome. Self-contained and self-supporting was the realm of Aka and it seemed that the intelligent gnomes that peopled it needed nothing more than the brine of the ocean to make any and all of their necessities. From this they extracted the component elements, the separated hydrogen being used as the base of practically every commodity. They merely broke up the simple atoms of this element into protons and electrons and then reassembled these to produce any of the other elements they required. The need for the crystal dome was accounted for by the fact that a certain catalyst used in the processes was subject to rapid deterioration either in complete darkness or in the normal artificial lighting of the caverns but was not affected by the weak filtered sunlight from above.

Ongli halted them before a railed-in enclosure where a number of workmen were engaged in attaching a lifting rig to the huge eyes of a circular cover plate which rested on the rim of a sunken cauldron of enormous size. Above them dangled the chain block of one of the cranes.

"Radium pit," their guide explained," must not come nearer as it very dangerous to life."

Pete noticed that the workmen were protected by leaden aprons and gauntlets and that they wore helmets of the same material. The guards drew well back when the hooks were attached and the signal given for the crane operator to hoist the cover. Ben feigned an air of nonchalant boredom.

The great cast lead lid swung free and a blast of greenish incandescence smote them like the breath of a furnace. The air about them vibrated to the energy of the vicious boiling contents of the cauldron. Swirling fingers of the greenish substance stretched forth and squirmed menacingly, then dropped writhing into the mass of seething material.

"Gaze not too long," Ongli warned. "There is blindness in so doing. All of the power we use is thus born. The radium it is so very——"

But Pete had glanced upward as a startled cry rang out in the eerie purple twilight above. One of the chains supporting the great metal lid had snapped and the heavy casting teetered precariously on the two remaining supports. It was directly over their heads, swaying jerkily. There was another snap and it swung down with a swish. Pete grasped Ongli and threw him to the floor with jarring violence just as the swinging mass of metal crashed through the iron railing and carried two of the workmen into the mouth of the radium pit. He lay panting beside the prone figure of Ongli, noting with satisfaction that Ben had jumped sideways and had saved himself by his action.

Frightful animal cries from the doomed workmen rose piercingly above the din of the laboratory and they disappeared beneath the bubbling surface of the greenish liquid. A momentary wild thrashing of arms brought a horribly distorted Akata face to the surface. Where the staring eyes had been there were awful smouldering sockets; the flat features were a metallic mask, grinning sardonically through the green phosphorescence. Then it was gone and dancing waves of the glowing liquid lapped triumphantly at the edges of the pit.

Pandemonium broke loose in the great laboratory, the workmen deserting their posts and crowding to the scene of the accident. A siren shrieked with raucous insistence. A din of babbling voices drowned out the sounds of the machines.

"Ai! Ai!" wailed Ongli as Pete lifted him to his feet and dragged him from the howling mob, "The radium death! But Ongli lives by quick act of American. Ongli never forget. Ongli repay."

He fawned on his rescuer, trembling with emotion. Then he drew himself erect and glared at the guards, who had gathered close.

Ben grinned delightedly. This was a break. The monkey-man would be a friend in need.

CHEVAN sent for them before the sleeping period. Ongli had reported the accident and was engaged in animated conversation with his chief when they approached the glass-topped desk.

"Caldwell," said Chevan, "your quick action in saving Ongli from the radium death convinces me anew that you are the very man I want for the great work to come. But I am compelled to warn you that his gratitude can avail you nothing in any attempt to evade the agreement with me. You can not escape from Aka. Four hundred and sixty feet of water roll over your heads and there is but one exit from Aka—through the airlock in the cavern of the sub-tanks. Ongli is a new-made friend, but his first loyalty is to the great cause. Then, too, there are other watchers. Understand?"

Pete understood perfectly. Four hundred and sixty feet of water! That meant a pressure of some two hundred pounds to the square inch on the doors of the airlock and on the crystal domes of the laboratories. What tremendous strength must be built into these things and into the sub-tanks themselves!

"We understand, Chevan," he said shortly. "But, in accordance with your promise, we still have six days in which to decide."

"True. It is merely a warning I'm giving you. You shall have your six days if you wish, but I'm confident you'll decide before the time is up—and decide right."

Pete and Ben were mute.

"You do not answer." Chevan regarded them thoughtfully. He had had much experience with the stubbornness of Americans. "Very well, I'll not press you. But each twenty-four hours will bring new revelations to you. Each will further convince you of the wisdom of a decision to join us. I don't know why I'm giving you this chance, but somehow it seems I need human companionship and assistance. . . ."

He hesitated and looked apologetically at Ongli. The great Chevan was not altogether happy in his adopted environment.

"Perhaps," Pete ventured, "you are on the wrong track, Chevan. Maybe you'll give up this mad venture. We'd gladly help you in that."

"What?" the commander thundered. "go back to a world that turned its back to me? Back to exile? never! It's a rotten world anyway, and merits annihilation. I shall establish a new order of things; a new civilization. From the destruction shall rise better things. With the aid of Akata science I shall breed a race of supermen and superwomen, moulded in the form of the Nordic but of god-like beauty and stature and with superhuman intelligence. And I, Chevan, shall rule them—wisely and well. You think my venture is a mad one. You think the conquest impossible. Here—look at this!"

He strode to a wall cabinet and switched on the current of a television receiver. As the screen glowed into life, Ongli excused himself and left the room.

"Another step in your education," he announced. manipulating the dials of the instrument rapidly. "This teleview surpasses anything in use on the surface. No transmitter is necessary to actuate it; a searching ray is sent out to the point to be viewed and the light impulses are brought back to us for observation in natural color. The same ray conveys to us the sounds emanating from the point of origin of the view. A great contrivance for your Secret Service—if they had it."

The view of the screen was that of an enormous room where hundreds of vertical cylinders lined the walls, from which cylinders a maze of piping led through numerous other vessels and finally converged at the mouth of a great circular pit in the center of the room. A pulsating blue-green glow permeated the atmosphere of the room and all the workmen in sight were encased in protective armor. The buzz of activity came to their ears like that of a swarm of bees.

"Radium!" breathed Chevan, "ah, how little you know of its uses and properties—you of the surface world. Your scientists tell you that it is an element whose atomic weight is 226 and whose atomic number is 88. They know of its continuous disintegration; of the emission of alpha and beta particles; of the gamma radiations. Its products have been investigated by them and are in partially successful use in therapy, the gas radon particularly. But in all their research and experiments they have never learned the true secret of radioactivity. They have never been able to speed up the normal rate of disintegration of the radium atom as have the Akata. The vast energy available from this source is thus lost to the peoples of the surface world. Even did they know these things it would avail them little, since the mineral is extremely rare up there as you know. Here there is an unlimited supply."

Pete was listening with interest as he watched the screen, but Ben affected his usual air of indifference and walked around the room, looking at everything excepting the screen.

"Radium exists in many forms?" Pete asked.

"Oh yes—down through the uranium-radium-lead disintegration series there are many stages. Radium itself is produced by the disintegration of its parent, ionium, and disappears on disintegrating into its product radon. In turn then, down through the series, we have radium A, B, C, and three other forms down to polonium—then lead, the end product. Then, of course, there are the compounds, sulphates, hydroxides, chlorides, bromides and the like. It was a liquid compound you saw in the laboratory. But the important thing is that the Akata understand the stuff perfectly; their very existence depends on it, as does the success of the war against the upper world. The vast energy of the alpha particles is used to run their prime movers; tiny, vibrationless radium motors provide all their power. Beta radiations are used to set up disintegration of other elements and, in conjunction with the penetrating gamma radiations, to activate the various destructive rays to be used in warfare. Here—another instructive view."

The scene changed with a new adjustment of the dials. A hollow roar came from the sound projector of the apparatus. They were deep in a rock-walled passage now, with a group of Akata workmen who were operating the complicated mechanism with a huge ray projector. The roaring sound increased in volume as the blinding shaft of light from the projector contacted with a ledge of solid limestone fully thirty feet in depth and extending for a hundred yards along the wall of the passage. Like a knife through cheese, the disintegrating energy of the beam cut through the mass of rock, slicing it neatly from the wall until, by its own tremendous weight, it broke away the last remaining connection and thundered to the floor with a crash that rattled the sound mechanism and caused the view to flutter violently on the screen

"Wow!" Ben exclaimed, "some ray, that!" He had been startled from his pose by the wonder of the sight.

"Yes," Chevan gloated, "each sub-tank is armed with eight such projectors, in addition to others equally destructive in different ways. How long do you think your paralyzed forts and battle planes will stand up under such energies? Your skyscrapers? But watch!"

The huge mass of stone was blocking the passage, thousands of tons of it. The workmen directed the ray into the mass, adjusting it to a broadened flare that covered considerable portion of the enormous block. The roar swelled to an ear-shattering rumble and the rock melted away as if it had been paraffin, excepting there was no residue. It simply vanished from sight and, in less time than is taken in the telling, all was clear.

"You see?" Chevan said triumphantly, "the power that is in our hands is beyond comprehension. And this is but the beginning of what you will be shown." He switched off the power and the screen of the teleview went blank.

Pete gazed at their captor with growing realization of the enormity of the menace to his world. "Chevan," he muttered, "I'm beginning to believe some of the things of which you have boasted. But I still think you're barking up the wrong tree. Suppose you do succeed in this terrible thing; suppose you overrun the Americas and bring them under your heels. Suppose even, that you conquer the entire world. What about these seven million Akata who will be let loose on the surface? They'll defeat your plan to set up a new regime. They, not you, will be in control; they'll populate the surface with their own breed and continue to kill off our present civilization. They may even kill you—after they've used you to lead them to victory."

Chevan smiled craftily and lowered his voice. "All thought of, my boy," he cackled. "The entire brood will die off within a week after the victory is complete. I'll take care of that."

"What? You think you have a way of killing them off?"

"I *know* I have. Listen—and this may help you in reaching you decision—I have no intention of letting the Akata benefit from the conquest. They do not fit into my new scheme of things at all; they're too loathsome physically, though possessed of marvelous intellect and scientific attainment. Not for André Chevan. And here is the means of eliminating them: Radium again is the secret, the radium they must have for their continued existence and which I shall cut off from them. The food they eat contains minute quantities of the element which to us would be fatal but which to them is vital. They've lived in such close contact with the stuff that the tiny doses are necessary as a prophylactic. They'd have died off centuries ago had they not inured their systems to its ravages in this manner. And here's the joker—they must carry a supply of the stuff with them for internal use, a special compound that is extremely unstable and can be deteriorated instantly by subjection to radio waves of a definite frequency high above any in use for practical purposes. But I, Chevan, have secretly developed a powerful transmitter of this short wave and, when the time comes, I will release its energy broadcast. Their preservative will vanish like magic and they will die before they can renew the supply; their ugly bodies disintegrating like that limestone block within the space of twenty-four hours. Now—is Chevan wise?"

He gazed into their horror-stricken faces with malicious glee. They were in the hands of a fiend incarnate!

ONGLI awaited them when they left their quarters early in the next waking period. The sullen guards hovered expectantly in the passage outside their door.

"Now we visit sub-tank," Ongli announced brightly.

"Good," said Pete, without enthusiasm. His thoughts were gloomy now; it was a strain, this fear of speaking one's thoughts aloud. He and Ben had refrained from conversation since leaving Chevan before the sleeping period—the searching ray of his telephone view and sound mechanism would find them out. The walls sure did have ears in this place—eyes too.

Ben was in a vile humor and lagged behind as Pete followed Ongli to the tube station.

Ongli, too, was less talkative than he had been, though his every action bespoke consideration of the man who had saved his life—and respectful gratitude.

When they were in the speedy car of the pneumatic tube Pete turned suddenly to the guide. "Ongli," he asked. "About this war against the upper world. Can nothing stop it? Even if something should happen to Chevan?" The commander would have a job listening in on this conversation; he'd be kept mighty busy following a car speeding at five hundred miles an hour.

Ongli eyed him in surprise. "Nothing stop war!" he averred. "Nothing happen to Chevan. But, even if did happen, war go on. Akata make religion of hatred against your world. Religion of hatred, upper world; religion of love, radium. No, good friend, war is necessary. Must not fail. That why you must join with Ongli. Save Ongli from radium death; now Ongli save you, good friend. But only can save if you agree to join Akata. Cannot return you to upper world. Even if could, that not help. Good friend die then—when Akata come."

The eyes of the ape-man had at first glittered with the fanaticism of a bitter enemy—that religious hatred of the world. Now they were wide with anxiety lest his new friend seal his own death warrant by refusing Chevan's offer.

Pete smiled with an attempt to reassure him, then lapsed into gloomy silence once more. There was no help to be gotten from this source. Chevan or no Chevan, the plans would be carried out. He wondered why they ever had taken the exile in with them—and how they had accomplished this.

They left the car at the cavern of the sub-tanks and followed Ongli down the long runway to one of the monster amphibians that waited at the inner door of the huge airlock. The guards left them at the entrance to the vessel.

"Chevan say you learn much," said Ongli as he bolted the cover of the entrance lock from the inside. "Ongli show you—yes, very much. This war machine to be Ongli's own command when time comes."

He proudly led the way to the control room of the vessel.

The few Akata they encountered in the passages bowed low in recognition of Ongli's authority, but not without bestowing glares of hatred on the two Americans who accompanied him. It was evident they would be given short shrift were the protection of Chevan and his aides withdrawn.

"How much Akata will one of these ships carry?" Pete inquired.

"Three thousand." Ongli's eyes lighted with pleasure when he sat at the controls of the huge vessel. "Three thousand fighting men of Aka. But so simple the control

one man can handle from here. You shall see. Ongli maneuver ship with own hands."

Before them were the intricate controls of the sub-tank, a maze of glittering instruments and handwheels that covered the forward wall of the control room. A circular window of heavy glass looked out over the curving hull plates toward the pointed bow and through this they could see that the inner cover of the giant air-lock which opened to the Pacific was being opened.

Ongli caressed a gleaming lever. At his touch there came the smooth purr of the radium motors from somewhere in the vitals of the huge amphibian. At his touch of another lever they moved forward on the caterpillar tracks. They were in the airlock now and Ongli talked as they waited for the inner door to close.

"Sub-tanks to go out thus when time comes," he said. "Nearly two million Akata go with them. Provisions, ammunition, everything for campaign go, too. Tunnels from Aka to America nearly ready now. Through tunnels other five million Akata enter surface world after sub-tanks clear way. Bore through with disintegrating energy when time comes. Then all in sunlight where belong; where surface men mistreat them centuries ago. This war of revenge, good friend."

"Revenge?" echoed Pete and Ben.

"Yes. Akata ancestors great scientists three thousand years ago. Savages of upper world think science witchcraft. Persecute our forebears without mercy Finally few survivors escape to Aka, which then island in great sea. Find rich mineral deposits. Radium ore in vast amount beneath surface of island. Akata become miners and live mostly in underground passages. Then come great earthquake and tidal wave. Aka sink far beneath waves and Akata entombed. But not discouraged. Develop science very much and prosper greatly. Multiply for many generations and prepare war against surface people. Now ready for war; ready to retake world where once mistreated."

"What?" Ben snarled. "You've nurtured a grudge for thirty centuries? Against descendants of savages of the dark ages? Why, our modern civilization is absolutely innocent of any of those old wrongs. How do you get that way?"

Ongli drew himself up proudly and fire flashed from his beady eyes. "Akata never forget," he announced, "and you speak not truth. Your people same as ever. Not innocent. Bad, spiteful, warring races still on surface. Many, many wars up there since Aka sink. We watch in teleview. We see horrible destruction of last war. We find Chevan. He great general; great organizer. He know much about strength and weakness of all nations up there. He hate them, too, because they misuse him as Akata ancestors misused. We send sub-tank for him and rescue. He lead us to victory. We make upper world clean and good once more."

"Why, you nut!" Ben retorted. "Chevan is a double crosser if there ever was one. He plans to——"

But Pete had clapped his hand over his partner's mouth. "You fool!" he hissed, "shut up! The big boy's probably listening to every word. Want to get bumped off right now?"

"I don't give a damn! We're done for anyway. Can't you see how hopeless it is? They're all set—they can do just what they say they will. We'll either be croaked here or back home, so what difference does it make?"

Ongli watched and listened in amazement. He did not understand why the two should be quarreling. The ways of the white men of the surface were incomprehensible. Then suddenly he turned to his instrument board. The airlock was filled with water outside them and the outer door was opening.

"Ugh!" he grunted. "Forget talk. We go out now."

The beams of two powerful searchlights illuminated the waters far ahead of them and the two young Americans lost themselves in contemplation of the wonders of the ocean's depths. The sub-tank crawled rapidly over the smooth bottom and Pete watched carefully the movements of Ongli's deft fingers as he maneuvered the vessel. A forest of calcareous algae loomed before them and they crashed through it as some prehistoric mastodon might crash through a forest of saplings. A giant deep sea creature with armored sides and staring eyes that waved at the ends of long tentacles slithered over the forward deck and was gone.

"We go to surface," Ongli stated.

The throbbing of pumps mingled with the purr of the main motors. With these exhaustless radium engines there was no need of using compressed air to blow the ballast tanks as in the big boats with which Pete was familiar. The sub rose leisurely from the bottom.

"We not open conning tower," Ongli observed, "Chevan say not. But can see from here. Also show you speed of ship."

The twin screws were churning the water now and the sub shot forward at ten fathoms depth. Fifty, sixty, seventy miles an hour, if the speed indicator was correct. Pete gasped his astonishment.

"Can do ninety on surface," Ongli chortled, noting his surprise. "These ships fast on land or sea. Watch."

They broke the surface and scudded along behind a roaring bow wave. It was good to see the sun shining once more, and the blue of the sky.

Ben uttered a startled exclamation from his position at one of the starboard ports, "Look, Pete! A British cruiser!"

Ongli whipped his head around sharply. It was true. There, not two thousand yards astern, was the long gray shape, black smoke pouring from her funnels and her ensign fluttering in the breeze. A puff of smoke issued from one of her forward gun turrets as they watched and the sub was rocked by the force of a terrific explosion. A column of water rose high where the shell struck the water off their bow. The cruiser was inquisitive as to the identity of this strange craft.

Pete watched Ongli narrowly, wondering whether he would submerge. Surely he could not submit to a closer inspection by this war vessel of the surface world. Ongli's eyes flashed fire as a second shot came across their bow and suddenly he was snarling into the microphone that hung before him. Rapid replies came to their ears in the gutturals of Aka. Then came that stabbing pencil of purple light from the stern turret, splashing full against the hull of the cruiser.

The sub had swung around now and Ongli was snapping orders into the microphone. They could see the gun crew on the cruiser, frantically working with the useless mechanism of a rapid-fire gun. The proud war vessel was rolling helplessly, her turbine-electric drive paralyzed by the vicious ray of the Akata.

"You don't intend——?" Pete hesitated.

"I do intend!" Ongli babbled fiercely. "Surface ship attack sub. They go now. First of great war!"

He shouted a quick command and the sub vibrated to the energy of a powerful ray generator. There was a

deafening roar as the shaft of blinding light sped from the sub on its mission of destruction. The cruiser was shrouded in a brilliant mist for a moment. Then it was gone, vanished utterly from the surface of the ocean, a seething cauldron of tortured waters marking the spot where it had rested. A marvelous war machine of the greatest navy on earth, a thousand brave men vibrant with life an instant before—gone, gone in the twinkling of an eye.

Pete Caldwell was assailed with nausea as Ongli gazed exultantly on the scene of destruction.

LATER, when they reported to Chevan, the captives from the surface world were gloomy and taciturn. The commander regarded them with triumphant glee, as Ongli recited the tale of his encounter with and destruction of the cruiser.

"Saw something this time, didn't you?" he chuckled, "begin to believe we'll succeed, don't you?"

"Yes, curse you!" Ben growled. "And it's murder, that's what it is. That cruiser didn't attack; she only fired across our bows. Why———?"

"Enough!" Chevan roared. "It is but the beginning. All war is murder. And I'll have no criticism from such as you. Another word and I'll retract my agreement."

Pete was nudging his friend into silence. They still had five days to go and he was trying to think. There must be some way in which they could outwit this mad exile—some way to forestall the plans of the loathsome Akata.

"It seems," he said, in a placating tone, "that you have us in your power, Chevan. I am almost convinced of the final success of the war that is planned. Ben isn't—quite. But he'll come around, I'm sure, before the time is up."

Ben glared at him in disgust and opened his mouth as if to object, then shutting it with a click of his teeth, as he saw that fleeting look of guile he had often seen in his friend's face when he was about to hatch one of his plots.

"Yes, I'm sure of it." Chevan settled back in his seat with a satisfied smile. "It is just a matter of education and a little patience with you two until you see the light. I'm willing to wait until your period of grace has expired. It'll be worth it."

"Ongli gave us some of the history of Aka today," said Pete, as if nothing else mattered, "and told us much regarding the plans for conquering the upper world. It's quite a revelation."

"Hm—yes." He turned to Ongli suddenly. "You can leave us now," he said, "until after the next sleep. Report to Miti-oro and tell him I have commended you for your action in destroying the enemy ship."

Ongli bowed low and withdrew. Pete thought he saw an expression of suspicion pass over his distorted features. But you couldn't be sure about any facial expression of these creatures—excepting the hatred that flashed from their beady eyes. Ongli was the only one of those they had seen, who did not register undying enmity when his eyes rested on them. Funny they tolerated Chevan.

No sooner had Ongli retired from the room when Chevan lowered his voice confidentially and leered at his two unwilling guests. "That one," he said, "is the most humanlike of all his kind. He seems to have understanding and emotions that his fellows have long since forgotten. But, even so, I do not relish the thought of him as an intimate. God, but they're repulsive! I can't wait for the time to press the release of the energy that will spell the doom of the entire breed. Miti-oro, their king, trusts me. Ongli trusts me. But little do they suspect that I have discovered the secret of the frequency that will destroy their supply of the radioactive prophylactic on which their existence depends. Little do they think that I, Chevan, am to be their Nemesis as they are to be the Nemesis of the upper world."

He pointed a finger to a metal-studded door in a corner of the room. "Behind that door," he gloated, "there is the portable transmitter of the frequency that does the trick. When the great work is accomplished and when all of the breed of Aka have migrated to the surface I shall actuate that transmitter. Then Chevan alone will hold the fate of the earth in his hands; the new era will have begun. And you, Peter Caldwell, shall share in the spoils; you, too, Benjamin Walton, if——"

From the front door came the cold voice of Ongli, bitingly sarcastic. "There be no 'if' André Chevan. Ongli has heard. Now, Miti-oro hear and Chevan live not to see the day. Traitor!"

Chevan had risen from his chair, his face purpling. Quick as a flash his hand shot over the desk top and in it was gripped a slender weapon at sight of which Ongli turned suddenly to flee. But too late. The spiteful crack of the ray pistol coincided with his movement and a sudden flash of light burst forth between his broad shoulders; a splash of flame it seemed to be, searing flame that spread and devoured in an instant. Ongli was no more. Just vanished in a puff of vapor like a punctured gas balloon. The news of Chevan's perfidy would not reach Miti-oro now.

"So," the commander chuckled, replacing his ray pistol in the drawer from which he had taken it, "Ongli was eavesdropping for the last time. Chevan is not caught napping easily."

Pete clenched his fists and stared hopelessly at Ben. Their only friend in the realm was gone—though he could have done them little good. Chevan was manipulating the dials of the teleview now and the screen lighted with its usual cold blow. A sinister countenance faced them from its surface; beady Akata eyes wandered from one to the other and then focussed hard on those of Chevan.

"Miti-oro greets you, Chevan," came a metallic voice from the writhing lips of the apparition. "What is it you wish?"

"Greetings, oh King," the commander replied, in silky tones. "It is to report the passing of Ongli, your majesty."

"Ongli is dead?" Swift anger crossed the stern visage of the ruler of Aka. "By whose hand?"

"Mine, your majesty," Chevan returned swiftly, "he was plotting to return these captives to the surface and I destroyed him. The upper world would have been warned and the campaign made more difficult. Ongli's knowledge of insulating material—they would learn of the protection against our rays——"

"Enough, Chevan. You have done well. You will now kill the captives?" Miti-oro eyed them dispassionately, cold-bloodedly.

"Not yet, oh King. They have much knowledge which I wish to obtain. Some of it is vital. They shall live yet a while."

"It is well, Chevan. But guard them well."

"Of a certainty."

The screen dimmed and Chevan turned to face his captives, a broad grin on his face. "You see," he exulted, "how Chevan wraps them around his little fingers? Even their king. Oh, I tell you, boys, this is soft. It is like stealing candy from children."

"Stony-faced devil, isn't he?" said Pete irrelevantly.

"Yes. And stony hearted. But Chevan has a stonier heart. Go now and don't forget what you have seen and heard. But five days remain to you and, in that time, remember—Chevan keeps his word. Chevan is all-powerful. I shall await your decision."

Speechless, they left the presence of the double-dealing braggart. And the guards followed them more closely as they proceeded to their own quarters.

THE twenty-four hour periods passed more slowly and miserably after that. Days, they were accustomed to counting them, these interminable periods that they could only keep track of by their own watches. Chevan did not again send for them and a new guide had supplanted Ongli; an unfriendly beast who rarely spoke to them and who watched them with eagle eye. Each day the muttering of the guards and of the Akata with whom they came in contact became more menacing.

But Chevan's orders evidently were being respected. They were taken wherever they wished to go and, grudgingly it is true, given all information for which they asked. They picked up a few words of the outlandish language and were able to make their simple wants known. They even visited the oxygen generators and air-conditioning cells, the most vital mechanisms in the realm.

Pete was becoming a puzzle to his friend and a nuisance to the guards, with whom he was continuously in trouble. He had developed a habit of straying away and picking up interesting objects. On several occasions he was detected in the act of concealing some trifling article on his person and this always brought an argument with two or more of the guards. Once he lost his temper and sent one of the creatures kicking with a mighty wallop on the chin. He was immediately pounced upon by the others and quickly wrestled into submission. But they refrained from injuring him; Chevan had ordered that their lives be spared—for seven sleeps.

Most of the sixth day was passed in the assembling shop where the great sub-tanks were put together. Here they learned much more about the construction and operation of these monster fighting machines. They learned too of their vast difference from the submarines of the nations of the surface. The radium engines were marvelous mechanisms and caused no pollution of the air when submerged. They eliminated the need for batteries with their danger of evolving poisonous fumes and for coughing Diesel engines when on the surface. And the fuel compartments were little more than tiny leaden cases that occupied hardly more room than a sailor's luggage, yet provided a cruising radius of twenty thousand miles on land or sea. And the armament of these engines of destruction! Fourteen-inch guns that hurled projectiles containing a high explosive ten times more powerful than any in use on the surface; ray projectors of all kinds, each deadlier than the other; gas disseminators that could wither an acre of forest at a puff—these were but a few of the terrible implements of warfare.

During the sixth sleeping period, Ben sneaked through the connecting door and into Pete's room. He placed his lips close to his friend's ear that the guards outside might not overhear his conversation and to forestall any effort of Chevan's in case he was listening the sound mechanism of his teleview.

"Say!" he whispered huskily. "What're we going to do? Make a show of joining up and then wait for a chance to get away?"

"Not on your life! We gotta stall off this crazy guy and his clever beasts. If they ever get started they'll clean up the world. No fooling! This war junk of theirs is the berries. Nothing can stop 'em if they get going."

"Yeah—looks bad. But how're we going to stop 'em?"

"I've got a plan, Ben. Been picking up some stuff too. The junk I let 'em catch me with was just for a blind."

"What did you get?"

"Plenty. Couple of their ray pistols and some gas bombs. A bunch of keys and some other stuff we'll need."

"No kidding! But, Pete, how in the devil can we put it over on Chevan and these millions of apes that're working for him? How can we get out of here and back home? We'll just get ourselves bumped off and do no good at all."

"Is that so? Listen—I said I had a plan and I have. Maybe we'll be killed, but that'll be no worse than the way we are. And I'll bet we can bust up this war of theirs, too."

Unconsciously they had raised their voices, though they had been most careful in this respect previously. Now they were startled by a sudden commotion in the hall. The voices of Chevan in loud angry tones!

"Here, quick!" Pete muttered, thrusting a cold metallic object into Ben's hand. "A ray pistol. Might need it."

He rushed to snap on the lights and the two draped themselves negligently over adjoining chairs as if they had been engaged in an inconsequential discussion.

The door flew open and Chevan pushed in, at least ten of the ugly Akata behind him.

"Ha!" he bellowed. "So you're planning treason! Didn't know my sound apparatus could pick up whispers, did you?" He roared a command to his minions in the Akata tongue.

Pete had his feet drawn up under him and Chevan was directly before him, shaking a ham-like fist in his face. He could not have heard the part about the ray pistols or he'd have had their lives by this time. The Akata had drawn their own ray pistols, but Pete saw that these were only of the paralyzing kind. Their orders had been not to kill and these were their only arms.

"The vibratory death for both of you!" Chevan was shouting. "A lingering and excruciating agony that is still too good for you. I shall watch with delight as your bodies tremble and oscillate with increasing intensity until each joint shall have left its socket until——"

He never finished the tirade, for Pete's feet shot forth and caught him full in the middle. A terrible trick of the Canadian wilds! The commander went down with a terrific crash and did not rise. Blood gushed from a deep gash in his temple where he had struck a corner of the metal-topped table in falling.

The two Americans were on their feet now, the rays from their disintegrators flashing amongst the astonished Akata. At each contact one of the deformed

creatures shriveled in a blinding flash and a puff of vapor and was gone. Closely massed as they were, seven or eight of them were obliterated at the first volley. Pete felt his arm go dead as a paralyzing ray struck home. Ben's death ray had caught his antagonist in time to spoil his aim, else he'd have been completely paralyzed. One of the remaining two darted for the door to spread the alarm. They must not let him get away! Pete dived through the air and brought him down in good old football fashion. Then he straddled the malformed body and throttled his victim cheerfully and efficiently. Ben had accounted for the other.

"First blood!" Pete chortled as he arose and closed the door. "Now let's look at the old man."

He knelt by the prostrate form of Chevan and felt for his pulse. The commander was dead.

"Dead as a herring, Ben," he said. "There goes another dream of an empire. They always think they're invincible, these would-be world conquerors. Then some little thing like this——"

The shriek of a siren interrupted him.

"Lord!" groaned Ben, "the alarm is out. These apes are uncanny the way they learn things."

"Shut up!" Pete hissed. "We'll beat 'em to it." He turned out the lights.

THEY slipped into the passage and made for a dark side hall. A number of hurrying Akata came howling behind them. Pete tossed a gas bomb in their midst and pulled Ben into the side hall after him.

"Quick!" he whispered. "The small elevator. We'll go down." Feeling was returning to his left arm and it pained horribly.

The automatic elevator dropped them a dozen levels or so at the touch of a button. Pete knew where they were going and Ben did not question him.

They emerged in a dark tunnel that was cut into the solid rock. A pocket flashlight—another of Pete's pick-ups—showed them the way.

"You're heading for the magazine—where they store the high explosive!" Ben gasped.

"You bet! We'll blow it to kingdom come and a whole corner of Aka along with it." He was fingering a small conical object.

"What's that, Pete?"

"A detonator. You know—off the end of a shell. Going to set it for ten minutes to give us a chance to get away."

Ben heaved a sigh of relief. He had wondered about that—it would be just like Pete to blow them up along with the magazine if he thought the sacrifice would upset the plans of the Akata.

One of the metal doors of the magazine was ahead. A key from the bunch produced by Pete opened it readily. He struck the detonator sharply against the stone floor to set off the cap and start the fuse burning, then hurled it into an open canister and closed the door.

They ran along the passage and turned into another that led downward. These tunnels were deserted and unlighted during the sleeping period but soon would be alive with searchers. They must hurry.

"How'd you learn about all these passages?" Ben jerked out as they ran.

"Map. Hooked one the other day and been studying it."

Ben marveled at the resourcefulness and secretiveness of his partner. He'd never give him another argument.

Now they were coming into a lighted chamber. The voices of a group of Akata reached them.

"Quiet," said Pete. "We'll have to croak 'em."

They peered into the opening, which was a way station of the pneumatic tube. Three of the dwarfs were waiting for a car. As many flashes from their disintegrators accounted for them.

"Funny," said Ben as they walked to the platform, "doesn't even make you feel squirmy to kill 'em. Just like shooting woodchucks or something."

The swish of air warned them of the approach of a car. The exit door from the incoming tube popped open and it slid alongside. The door opened and they stepped in, brandishing their ray pistols.

Only three passengers were in the seats, two of these being withered old creatures incapable of offering resistance. None of them was armed and they readily submitted to the Americans, who gagged them and tied their hands and feet with cord ripped from the upholstery. These cars were automatic, so there was no operator to deal with.

Pete referred to his map now. "Next stop," he announced cheerfully.

"Then where'll we be?"

"Navy yard, or whatever they call it. Where the subtanks are."

"You son-of-a-gun!" Ben exclaimed in admiration. "But there'll be a gang of apes there, won't there?"

"No, only the watchmen. The searching parties'll never dream we could get there so quickly."

But Pete was overly optimistic in this, for when the little car of the pneumatic tube pulled into the next station they found it was alive with armed Akata.

"Now we're in for it," groaned Ben.

"Easy now," Pete warned. "We'll gas 'em."

He unclamped the door and swung it a few inches, hurling one of the egg-shaped grenades into the midst of the crowd. There was a muffled explosion and he had the door closed once more. Rushing to the forward end of the car he closed the emergency switch that made the automatic controls inoperative. Reaching into the breast of his shirt he withdrew two folded packets and handed one to Ben.

"Gas masks!" exclaimed the mechanic. "You think of everything, don't you?"

"Have to," Pete grinned as he adjusted the protective device over his head. "Come on now, let's go!"

They were out in the station then, climbing over piles of bodies, some still squirming in their death agonies, others inert. The gas of the Akata was powerful stuff.

A NARROW passage led from the station into the "navy yard," as Pete had called it, and they slid through cautiously until they came to the entrance of the great chamber. Two guards were on duty at this point and each of the Americans selected one, pouncing upon them from behind and with quick grasps of their windpipes throttling any possible outcry. They dragged the creatures into the passage and despatched them quickly and silently.

Now they were in the huge chamber among the subtanks. They skirted one of the outer walls to keep out of sight of any of the watchmen who might be around. If only they could reach their destination before the searchers arrived!

The lone tank which faced the giant airlock loomed before them in the semi-darkness. None of the Akata

was in sight. Pete sneaked along beside one of the caterpillar tracks until he reached the open manhole of the vessel. Then they were inside and undetected So far, so good.

It was the work of but a moment to clamp the hermetically sealed cover and pull the switch that turned on all lights in the mighty war machine.

"How're we going to get out?" asked Ben.

"Cut our way through. Come on—up to the forward turret."

A tremendous shock threw them flat. The tank seemed to have jumped a foot in the air.

"What was that?" Ben turned a white face toward his partner.

"The magazine," Pete grinned. "Never think we could've done all this in ten minutes, would you?"

Then there came a roaring rumble which echoed and reverberated in the huge cavern outside, coming to their ears even through the thick double hull of the sub-tank.

"Geez!" muttered Ben. "Some bust-up!"

"And how! I'll bet fourteen levels were caved in over in that section and I know of three air-conditioning plants that'll be out of commission from the blast. That'll keep 'em guessing for some time and maybe give us a chance to do some things."

They climbed the ladder in the central well of the sub and made their way to the forward turret. Pete examined the ray projectors and selected one, a shining length of tubing with many handwheels and gadgets on its mounting. He had carefully inquired regarding the operation of these weapons and now pulled a lever that projected from the control box alongside. The rising whine of a great generator answered from somewhere below.

Through the thick glass of the observation port they watched as the fusing beam cut into the heavy metal of the airlock ahead. As it bored through with a shower of blinding sparks, Pete manipulated the controls of the beam to cut away a huge circle just inside the rim of the door.

Ben peered through one of the side ports and let out a yell that resounded terrifyingly in the narrow confines of the turret.

"There's a gang in the cavern!" he shouted. "They're manning one of the other tanks!"

"Swing that other projector around and give 'em hell!"

"How?" Ben was nonplussed.

"Works just like this one, you dumb-bell. Hop to it now!" Pete roared impatiently. Ben was a trial at times. Couldn't he see that he was too busy with the cutting process to explain?

The inner door of the airlock fell in with a crash. Now the beam was at work on the outer. He wondered if the inrushing water would quench the terrible heat of the beam. Now it was through at one point and no water entered. Building up steam pressure outside probably and that would hold back the water despite its two hundred pounds pressure to the square inch. Or no—it was disintegrating the brine as fast as it poured through—that was it. He wondered how Ben was making out.

Water was coming in now, through the narrow slit above the point where the beam was cutting—lots of water. But the beam still operated; it was cutting faster and faster. Soon they'd be through.

The outer door was driven in by the tremendous pressure of the water before its last section was cut through. Thousands of tons of Pacific Ocean came in with it and the sub-tank was tossed about like a cork. Pete was thrown violently across the turret and his head struck something hard. He staggered to his feet and made for the control room in a daze. Dimly it came to him that Ben was down and out—bleeding like a pig. Poor old Ben!

HARDLY knowing what he was doing, he yanked the lever that started the main generators. The answering rumble below told him that all was well with the machinery. He tried to remember the uses of the various controls; pulled this and twisted that until he knew they were moving forward. The brilliant beams of the searchlights illuminated the jagged openings ahead. They were crawling through on their great caterpillars.

He wiped the blood from his eyes and cursed. Ben was dead—good old Ben. But already he was avenged. The incoming waters would drown the Akata in droves, slowly and miserably. He wished he could hear them squeal. Overrun the Americas, would they? He thought gleefully of those torrents that now were pouring through every passage and chamber of Aka. Finally they would reach down to the deepest levels and flow to the farthest corners of the realm. Every one of the dirty beasts would perish. And he, Pete Caldwell, would have killed seven millions of them, if the figures were right.

The sub-tank was moving faster now over the uneven bottom. He reached for the control lever of the ballast pump motors. Suddenly he yearned for a breath of outside air. God! The lever was broken off short! The pumps could not be operated. He would die on the bottom—miserably, like the Akata.

Then he thought of the tank which was being made ready to follow them. Maybe Ben had not been able to put them out of commission with that ray projector. And even one of the damned things could do a lot of damage up above. He swung the great bulk of his own sub around by reversing one of the caterpillars. Yes, sure as hell and high water, there it was! Just poking its nose out from the destroyed airlock. He remembered one of the ray projectors that was operative under water. Lucky he'd asked about that. Bringing the controls to neutral he dashed for the turret once more.

When he reached the battery of ray projectors and peered through the port he saw that a slender pencil of orange light already was extending from the other sub-tank. Playing over the metal hull of his own vessel, it was. That would be the under-water beam. Savagely he jerked at the controls of the one projector he could use in the circumstances. Another beam of light sped forth and he directed it at the turret from which the other was coming. There was a flash at the far end of the beam and suddenly the first one was snuffed out. He had put it out of commission at the first try. Relentlessly he bored into the sides of the other amphibian; bored and bored with the ray until he saw a large section of the hull fuse away and admit the waters of the ocean.

"Got 'em, thank God!" he exclaimed fervently. "That's the last of the scum now, for sure."

"Whadju say?" a feeble voice mumbled.

"Ben!" It *was* Ben. He hadn't kicked in after all. But he would—later. Lord! He must break it to him

gently. Water was coming in now too. Down below, where the devils had bored through the hull. That would make it a little quicker anyhow. But Ben—Ben was such a helpless bird and so dependent on him for everything; he hated to think he'd have to fail him now.

"Ben," he was saying as he felt over his body for broken bones or serious wounds. "You all right, old man?"

"Sure. Just knocked out, that's all. But I didn't get that sub-tank."

"Don't worry about that. It's all right, Ben."

"Everything okay?"

"Y-yes."

"Then let's go home." Ben sat up and propped himself against the curved wall of the turret.

"Ben, we can't. The ballast pumps won't work and, besides, there's water coming in. We're stuck . . . down here . . . old man . . . done for, the two of us."

His friend stared blankly for a moment. "Why, you bonehead," he said slowly, "what's the matter with that thing in the super-structure? You know—the detachable life boat affair they told us about?"

Ben had put one over on him at last. Pete did some staring on his own account; then hugged his friend deliriously. He'd forgotten this safety feature himself. Good old Ben!

TWENTY minutes later they were on the surface and had unbolted the deck cover of the small boat they had entered through its clever air-locked attachment to the sub-tank. It had shot to the world of sunlight and fresh air like a bullet when the release levers inside were pulled.

They breathed deep for a long time without talking. It was good to be back to their own world, even though they were all in and a mighty long way from land.

Then Pete told of the fight with the other sub-tank and Ben told how he had failed in the first attempt to wreck it. It seemed there was one thing about the armament they had not known, for an invisible wall of protective vibrations of some kind had been thrown around the marvelous machine before the water came in and the rays struck harmless against this barrier. Apparently the barrier could not be used under water, though, so Pete had been successful later.

"Well, it was a good job as it turned out," Pete gloated, "and we're mighty lucky to be here."

"Long way from land, though," Ben objected, looking doubtfully at the oars and striving hard to keep from nodding into a doze.

Pete was as exhausted as his friend but he dragged himself to the provision locker and rummaged around amongst its contents.

"Ought to be a sail in the equipment somewhere," he grunted from the depths of the locker. "Found a short mast. Plenty of groub and fresh water too. We'll make it."

"Three hundred miles to Auckland?" Ben contemplated the effort with dismay.

Pete grinned sheepishly when he came up from the investigation of the locker. "Guess my reckoning was pretty punk," he admitted. "A look at Chevan's chart showed me that we are only a little more than a hundred miles from that port. They picked us up right about here, you know, and I was wrong on the distance."

"Well, my estimate on the gas wasn't so hot either," said Ben. "Thought fifty gallons'd give out on us and drop us in the drink before we were half way there. I was farther off than you were."

Pete had located the sail and they prepared to step the mast.

"Here you," growled Ben, noting that his friend was groggy. "You got a nasty cut on your head. Better let me wash it and fix it up for you first."

"Don't use too much of the drinking water," Pete warned, sitting down weakly and submitting to Ben's administrations.

It was a case of the blind leading the blind. Both were so worn out they could scarcely sit up—too dazed even to marvel at their extraordinary experiences of the past week—too tired even to give thanks for their miraculous escape.

Eventually, everything was in shape; the sail set and the tiller lashed with beckets. They talked things over in drowsy tones as the thirty foot lifeboat plowed through a moderately choppy sea toward Auckland.

"We'll make it in a day, if the breeze holds out," said Ben.

"Easy. Glad I was wrong with my reckoning."

"Me too."

Ben broke the silence again, after a moment. "What'll we tell 'em, Pete?" he asked, lazily.

"Tell who?"

"Everybody. The boss—the newspapers—the gang. Probably been out looking for us for days. They'll want to know."

"Have to cook up some yarn, Ben. Plane down—found this boat adrift. Sort of a miracle, you know. Anything but the truth. Have to lie out of it, you know."

"Why not the truth?"

"Well, you *are* dumb. Who'd believe a crazy yarn like that? I hardly believe it myself, now it's over. Who'd believe there was a place like Aka, or a bughouse fable about a lost race planning to lick the world? Sounds like a fairy tale. And to make ourselves out as heroes who've saved the entire world from disaster! Don't make me laugh. They'd say we were drunk. No, not a word about Chevan or the Akata—sub-tanks either. They'd make bums out of us, not heroes."

"Okay. You're right. 'Twas good sport though . . . while it lasted . . . good sport. . . ."

"Oh sure." Pete saw that his friend had fallen asleep. He was on the point of slipping away himself.

Serenely forgetful, neither of them gave a further thought to the dangers through which they had passed so miraculously, nor to the incalculable value of the service they had given to an unsuspecting and defenseless world.

Adventurous Yankees are like that.

THE END.

The Black Hand

By

Charles Gardner Bowers

AN eminent physician and well-known writer, in complying with our request to check up on the medical aspects of the story, adds, in part: "Please extend my personal congratulations to the writer of this story. It is a clever conception and a fine piece of work. The psychological phases of it tickle me pink, and the surgery is far better than anything I could have written." And we might add that one of the best features of this story is that it is so poignantly true to life.

Illustrated by MOREY

¶ *Van Puyster was wheeled in and as he was placed upon the table, the anesthetist asked, "What shall I use, Doctor?"*

"BUT damn it, doctor, I can't lose my hand. What am I paying you for, anyway? You're a hell of a surgeon. I thought when I called you that I was getting the best, and now it's too late to change, and you just stand there watching my hand rot away. Do something and be quick about it or I'll throw you out even now." And then his voice changed, "Oh, come on now, doc! Isn't there something you can do?"

"Yes, there is something. I can amputate and save your arm, as two days ago I could have saved your hand, if you hadn't been so confounded stubborn."

"But what's a stump to an artist? Fingers and hand are what he needs. Oh, why can't you save my hand? Why should I of all people, be picked to lose his hand? Why wasn't it my left hand, a leg; oh anything but my right hand?"

"Why, only day before yesterday morning I was using it on a portrait of the Prince of Siam, and now look at it." He turned on his side and glanced at the swollen and distorted upper extremity resting on a pillow, which hand had forty-eight hours before been so perfect.

"Oh! Great God, doc, look there," he almost shrieked as the doctor removed the final turn of gauze. "Blood poisoning has already set in." There on the back of his hand was a red and angry pustule no larger than a dime, from which oozed yellowish and very foetid pus. Radiating up the back of his forearm were a series of red and purple streaks. "See those lines, doc," he almost cried; "that's blood poisoning and it'll sure get me now. I'll die. I'll die just in time to miss getting a picture in the National Academy. Oh, what'll I do?"

"Oh! Calm down a moment. You're not dead yet, if you were, you wouldn't make so much infernal racket. Besides that's not blood poisoning—there ain't no such animal."

"Well I guess I know what is, can't I see it?"

"That's the first time I knew you studied diagnosis those years you spent in the Latin quarter of Paris. I understand that an artist gets a little anatomy, enough to recognize a few of the larger superficial muscles of the body. But I know that you didn't study bacteriology in learning to mix pigments. And speaking of stains, you wouldn't know whether to use Gram's Iodine or Chrome Yellow on the pathogenic organism in your arm, which in this particular case happens to be *Bacillus Aerogenes Capsulatus,* one of the chief causes of gas gangrene."

"Last night you said those incisions would stop it, and this morning it's ten times worse."

"I didn't say it would stop it; I said it might stop it. At that time I thought it was a streptococcal infection causing a cellulitis, but since I have the lab report, and by its appearance today, I know it to be a typical case of gas bacillus infection with incipient gangrene. Those incisions are of very slight value in this type of infection. Had it been a case of cellulitis, which is an infection of the loose connective tissues, we might have saved your arm, but in this instance the radical treatment is the only kind which can be successfully applied, and you'll be lucky to get off with your life."

"Save my life," cried Van Puyster. "What good's my life without my arm? Oh, do something doc, do something." And then he sighed resignedly. "Oh, that's all right Dr. Evans. You've been a good sport but I guess I might as well give in. The time comes only once in a lifetime."

"Come on now, that's enough of that. Shut down a moment and listen to reason. I have an alternative for your original arm."

"No you don't. I don't want one of your infernal leather and metal contraptions."

"I said, listen. You always were a spoiled ass. For once in your pampered life, try to see if you can listen. I've got to amputate, and the longer you wait the more you lose, but there's a gambling chance to either win or lose the entire arm."

"Do you really mean——"

"Yes I really mean, if you can keep still long enough for me to tell you, that you may have the equivalent of your original arm, or you may lose the entire extremity."

"You know I'd do or risk anything to get my hand back."

"Well, use all your will power again and try to listen, though I don't expect you to. When I was a student, I had my thumb practically severed; in fact it was cut through the bone and dangled by a piece of skin. As it was cut by a microtome knife, the wound was not absolutely sterile, but I was young and the professor so accurately approximated the ends, that circulation was immediately restored. There was no feeling in that thumb for over a year because nerve fibers never unite but grow out over the paths of old ones along the nerve tract. This is the thumb. Its action is not impaired in any manner. The only indication that it ever suffered a mishap is this thin transverse scar extending almost around it."

"But what's that got to do with my arm? I——"

DR. EVANS heaved a long sigh that sounded more like a groan. "If you can ever overcome that most impolite habit of interrupting, I'll be eternally grateful. I'd be willing to swear with my right hand on a Gray's Anatomy that the only way to make you stop is to cut the superior laryngeal nerve."

A look of humility spread over the artist's face. "Go ahead, doc, I'll promise not to do it again."

"When your hand first became infected, I knew what was going to happen. I knew that you would not consent to free incisions. I realized, also, that with your lowered vitality from too much indoor work, that the infection could not be stopped. In anticipation of these various events, everything is in readiness for me to perform an operation that will give you an arm. The only necessity is your word to go ahead.

"There is a condemned man in the state prison who has agreed to sell you his arm before he dies."

"But, but I——"

"Did you wish to say something, Mr. Van Puyster," asked Dr. Evans solicitously.

"No sir," came back very meekly.

"Then to continue. I agree that it is not very pleasant to know that you are using the arm that has murdered an unarmed man, still worse to realize that the arm is black, but the manifold benefits accruing from its use will always be a blessing to you."

"Do you mean to graft——"

"Exactly. To a skillful surgeon, the operation should not be impossible.

"I know it never has been done, on humans, but it has been done on frogs. Not only has an arm been grafted, but frogs have been severed in the middle and the posterior end of one was attached to the anterior end of the other and that composite frog lived until its untimely death, three weeks later, by an accident.

"To get to the more human possibilities of the problem. Skin grafts and blood transfusions are done every day and as both are tissue and the arm being a mass of tissues, you can see the plausibility of such an operation. If foreign blood will live in a body, why not a foreign artery? Bone grafts are not infrequent, so there is no reason why it is not practical to change arms, or at least an arm. There is, today, in England, a surgeon who has closely approached this operation. He has just recently performed two similar operations. Both cases were much the same. The patients simply having lost their thumbs, the surgeon re-amputated the thumb just below the stump and taking the ring finger of the same, or opposite hand, substituted it for the stump. In both cases there were excellent results and the grafted finger functioned perfectly. I have X-rayed both your arm and the donor's and as they are both of corresponding girth, and the arteries, nerves and muscles of similar size and location, the greatest difficulty will be experienced in joining the various veins, arteries and nerves. Happily, where I intend to make this resection, in the center of the biceps muscle, there are only two important vessels, the brachial artery and the basilic vein; the other vessels may be neglected as circulation is easily carried on by these two. There will remain then six large nerves, which may prove difficult, and only four muscles and the humerus. The humerus, you know, is the bone of the arm. The union, by suturing of the various structures, should be comparatively simple. For some strange reason his blood types perfectly with yours, indicating

I presume, that somewhere back in either your ancestry or his, there was a white or negro parent as the case may be.

"In this case, I intend to make a direct transfer of his arm to your stump, as I do not think you would relish being bound by the side of a condemned criminal for ten minutes, much less ten days, furthermore, he is doomed to execution before that time would have expired. In lieu of this I intend to employ arteriorrhaphy, or in simple terms, the sewing together of blood vessels. This will, of course, cause an almost immediate continuation of circulation.

"As to the cost of the operation. The negro wishes $10,000 to go to his estate and he wants an impressive burial. I shall charge no more than my regular fee for amputations, as I greatly desire the honor of being the first to accomplish this operation.

"The negro being condemned to the lethal chamber shall, instead, die under the anesthesia. Have I made everything clear?"

"I, I think so, doctor. Just, just let me think it over."

"Very well. I shall be back in an hour. I am sorry to so rush you but the need for the operation is most imminent."

Van Puyster was so dazed that he did not answer the doctor's "Good by." The shock to his aesthetic mind was almost overpowering. The thought of a black hand was revolting, but the thought of no hand at all was like death itself. Would the hand be large and awkward or would it be slender and sensitive? Was it coal black, or only a light mulatto? Could he ever return to his society with such a stigma? These and many others were the thoughts he pondered over, and after what seemed like only a few minutes, Dr. Evans was back in the room.

VAN PUYSTER seemed haggard and worn when the doctor asked for his decision. He gave a sigh and said, "Go ahead, doc, I've lost all the fight I ever had."

Dr. Evans stepped to the door and two orderlies entered with a stretcher to take him to the ambulance waiting outside. "The operation has to take place at the prison," was the doctor's exposition. "The governor said he could not give permission for the removal of the negro. It seems there is some law against it." He took a silver case from his coat pocket and withdrew therefrom a minute hypodermic syringe. Van Puyster looked on with expression akin to horror. "It's all right," the doctor said. "This is just a preoperative shot. It's perfectly painless and contains morphine, atrophine, and scopalomine. The morphine is used as an anesthetic and sudorific, the atropine and scopalomine as stimulants, and the scopalomine has also a sudorific effect. These ingredients greatly reduce the shock of the operation and, in the argot of the street, when you enter the operating room, 'it doesn't matter, to you, if the cabbage never heads.' I guess I'll have to leave you now, but I'll see you later at the prison. I'll have to scrub up and have the last minute details prepared by the time of your arrival."

When Van Puyster arrived, he was pleasantly drowsy. He did not even notice that the amulance did not drive at its usual breakneck speed. He did not notice when he was put on the wheeled stretcher to be taken to the operating room. In that room itself, he did not notice how far different it was from the usual type. The walls instead of being in the glaring white as is so prevalent, were of soft powder blue. The floor was a warm gray and covered with a seamless, waterproof compound which yielded slightly to the tread, thus reducing fatigue and resultant errors. All the fixtures in the room, including the table itself, were of gray. Even the gowns were of the selfsame color—gray—and instead of dragging the floor on the smaller nurses, and missing the knee of the anesthetist, who was abnormally large, by three inches, each person had his individual gown, which hung a uniform six inches above the floor. The skylight was of thin translucent glass which filtered out the hard irritating sun rays, but transmitted the ultra-violet rays which are so destructive to microscopic organisms. The operating light itself was contained in frosted crystal and lighted the field perfectly, without undue hardship on the surgeons' eyes. These innovations, which the doctor often liked to explain to visitors, were his own, and as the surroundings had a soothing effect on all within their influence, the mortality from operations within this amphitheater was considerably less than that in the usual white operating room.

Van Puyster was wheeled in and as he was placed upon the table the anesthetist asked, "What shall I use, Doctor?"

"Use ethylene. I think it will be best for this operation because it gives excellent anesthesia with no disagreeable after effect and the patient succumbs to its influences almost immediately."

The mask was fitted over his face and the ethylene-oxygen mixture turned on. In a few seconds the regular rhythm of his breathing showed that he was asleep. The negro was already anesthetized in another room and was now wheeled in and placed on a table beside him. The sites of operation were sterilized with picric acid solution and ether, and the infected arm carefully bandaged so none of the infected material could possibly get to the clean areas. Tourniquets were applied both above and below the sites of incision to prevent the loss of blood. The drapes were applied and Dr. Evans and his assistant, Dr. Aquino, who had been previously instructed as to the procedure, each began his incisions with a marvelous high frequency knife. This instrument, which derives its energy from the three-electrode vacuum tube, works on the principle of molecular disintegration. The energy from the high frequency currents disintegrates the tissues in its path and leaves a clean wound behind. After the double amputation, Dr. Evans and Dr. Aquino began the union of the black arm to the white.

"Fine black silk arterial suture, please," asked Dr. Evans. "We must restore circulation as quickly as possible. Dr. Aquino," he continued in his finest didactic style, "has cut the vessels and nerves long enough so that suturing may be easily accomplished. We will first unite the ends of the brachial artery. The normal shrinkage of tissues will easily account for all undue slack which may remain. Now, having done so, we will direct our attention to the basilic vein. The cephalic vein, which we see on the front of the arm, we will neglect, as also we will do with the *profunda brachialis* artery. Now let us turn our attention to the humerus. You will notice that Dr. Aquino and myself have cut the bone at such an angle as to make both parts coincide. The

(*Continued on page* 923)

Via the Time Accelerator

A GREAT many of us have found stories of the past intensely absorbing and instructive, but we doubt whether there are many who would not give a good deal to go ahead into the future many, many years—if their safety could be assured, of course. Einstein, with his generally un-understandable formulas and numerous theories so confusing even to eminent scientists, has apparently started those scientists who think they do know what it's all about planning or inventing some machine or something that will permit them to travel, in time, forward or backward, or perhaps both. It all seems remarkably simple and plausible after reading this story by our well-known author. This is one of the best fourth dimensional stories yet.

DINNER had just been finished, and for a while following the meal Brockhurst and I maintained a desultory conversation as we sat ensconsed in the comfortable chairs of his living-room. My eye chanced to fall on a little book that lay on a nearby table.

"Wells' 'Time Machine,' eh?" I began, picking up the little volume and thumbing the pages.

"So 'tis. Ever read it?"

I assured him I had, and after a brief discussion on the literary points of the story, our discourse turned to its practical possibilities.

"Looky here—what do *you* think of time-traveling? Consider it possible?" Brockhurst demanded.

My answer indicated that I had an open mind on the subject. "It's dangerous nowadays to employ the word 'impossible,'" I concluded. "So darn many 'impossible' things have become commonplace facts that the word hardly belongs in the vocabulary any longer. So I wouldn't say that time-traveling is impossible; but since my sentiments are conservative, I wouldn't say offhand that it is *possible* either. I prefer, at the present, to remain neutral with reference to that question."

"A commendable attitude," my companion lauded with a nod. "Very commendable. I suppose if someone *proved* to you that time-traveling is possible, you'd embrace the theory?"

"Absolutely! It would be silly to close one's eyes to a demonstrated fact."

"Sure thing. Now if I told you that time-traveling is possible, would you believe me?"

I did not reply at once; instead I surveyed my friend carefully from head to toe—sleek black hair, earnest, clean-shaven face with its twinkling blue eyes, and tall, well-knit body in its blue serge suit. Brockhurst was about thirty-eight or forty years old, unmarried, fairly well off, and an electrical engineer by profession.

"Hum—well—I'd believe you if you could *prove* your assertion," I answered at last slowly. "But as long as you just *say* it's possible, I prefer to retain my present impartial attitude. Why—have you anything authentic to indicate that it *is* possible?"

Brockhurst laughed a little. "A lot of mathematics that you couldn't follow to save your soul, and—a time machine."

I caught my breath to stare at him—incredulously, I am afraid.

"A *time* machine?" I repeated at last with an interrogative inflection. "Whaddaya mean? Show me!"

"Step right this way, please!" was the obliging rejoinder, and rising from his chair, my host conducted me to the workshop at the rear of his house.

Why should I bother to describe the room? It looked just as one might expect an electrical experimenter's laboratory to look—a large, stone-walled chamber filled with all manner of electric motors and appliances I did not recognize. Electricity isn't my line, you know.

At one end of the shop, before a great double door that was now closed, reposed a small cabin airplane, resting on a pair of staunch, rubber-tired wheels, between which I saw a compact array of electric machinery.

"Cast an appraising eye over the first time machine," invited Brockhurst with a magnanimous flourish, as we paused before the craft.

"Oh!" I exclaimed with a snicker, "I see. All you have to do is to climb into the trusty old crate, start the motor, and soar back and forth through time like a bird, huh?"

"Exactly!"

I looked at him quizzically.

"Evidently," he smiled at me with a merry twinkle in his eyes, "evidently you are a trifle nonplussed as to what my big idea is. Here you see before you a perfectly natural-looking monoplane, evidently constructed for the navigation of the third dimension; and here I

A Fourth Dimensional Story by

Frank J. Bridge

Author of "The Moon Men" and "The Moon People"

Illustrated by MOREY

¶ Ere I had taken a step, the floating plant whipped toward me upon its sinuous trunk, and of a sudden I was inextricably entangled in all its writhing, snake-like whiplashes . . .

am cracking a silly, pointless joke to the effect that it's a time machine. Hence you expect an explanation, and your expectations are fully justified. Let me, therefore, reiterate that this is a time machine. Want me to explain how it works?"

"Naturally—if you want to vindicate your purpose in dragging me out here!"

"Very well then." Brockhurst seated himself on a table close by, motioning me to take my place beside him. "I'll try to explain its rudiments as briefly as I can. First I'll have to give you a sketch of its principle, so that you may appreciate its operation. Do you know anything about Einstein's Relativity Theory?"

"A little," I confessed after a mementary pause. "Not much."

"Good! I suppose, then, that you know what a world-line is?"

I nodded, and to show him I meant it, answered aloud, "A world-line is a continuous succession of point-events in a four-dimensional space; or, in other words, it is the path pursued by any particular body through space and time. It is the body's trajectory, so to speak."

"That's the idea!" yelled Brockhurst, slapping me on the back. His enthusiasm was too great; I felt he was poking fun at me. "For instance," he went on, "if that body were not traveling through Space, its world-line would extend only into Time, or the Four Dimension, as some people call it. Now then, if we pick any particular point on that world-line—say the point x_1' x_2' x_3' x_4' designated by the dimensions x, y, z, and t—it follows that the adjoining point on each side will be the direction of the Fourth Dimension from our selected world-point. That is, the one point—x'_1 x'_2 x'_3 x'_4—will be in the *future* of our designated point, while the other—x_1 x_2 x_3 x_4—will be in the *past*. You understand?"

"Perfectly."

"All right. Now—here's where we get to the core of the matter: *Do you know that the Fourth Dimension need not necessarily be time?*"

I stared at him blankly.

"It makes no difference whether or not we regard the Fourth Dimension as time," Brockhurst went on after a moment. "To all practical purposes the Fourth Dimension and Time are identical. But—according to a certain scientist named Turner, the Fourth Dimension is *not* time, but a certain constant *multiplied* by time! And that constant is the velocity of light. Thus, if we let w represent the fourth dimension of space, we have:

$$w=ct,$$

where c is the velocity of light—186,000 miles per second—and t is any period of time we choose to work with.

"Since velocity is distance divided by time, we can make this equation a little more specific by writing it this way:

$$w=(l/t)t,$$

in which l is the unit of distance—186,000 miles—and t is the time required for light to cover that distance, or one second. From this we can see that every body travels 186,000 miles into the Fourth Dimension every second.

"Upon this assertion of Dr. Turner I based certain calculations of my own, which eventually culminated in this time machine here. I won't go into the details right now, but, briefly, it occurred to me that those equations I just gave you were subject to relativity; that a particle's velocity through space must also influence its progress along the Fourth Dimension.

"Time as we know it is not universally absolute. The rate of its passage depends to a great extent upon the velocity of its observer with regard to some certain reference system. A moving clock will run slower with respect to a selected co-ordinate system than a stationary one. According to the Lorentz-Fitzgerald formula, the 'time' of either clock is

$$T=\frac{t}{\sqrt{1-v^2/c^2}}$$

where t is the clock's rate when it is stationary, v is its velocity through space, and c is the velocity of light."

Brockhurst stopped in order to shift his position. Then he resumed.

"Let me give you an example. Imagine two asteroids in space, 161,000 miles apart. For the sake of simplicity we will assume they are stationary in space, at least in relation to each other. On one of these asteroids, which we will call A, we place two observers having watches which run at the same rate when at rest. One observer, O, has a space-flier capable of attaining enormous speeds. Now at a given instant, which is the same for both observers, O starts his space-flier and at the velocity of 161,000 miles per second flies from asteroid A to asteroid B. The second observer, S, remaining on A, watches and times the flight of his companion, remarking that exactly one second is required for O to make his trip from A to B. O, however, likewise times his trip, and *he* finds that only *half* a second was needed for the journey. The reason, of course is that his watch ran only half as fast as normally while he was flying through space from A to B.

"Now this idea, it occurred to me, must also apply to Turner's suggestion of the Fourth Dimension. If there is no absolute *time* in the world, there is no absolute gauge wherewith to measure our progress along the Fourth Dimension! The corrected equation then, becomes

$$w=(l/T)t,$$

t being the rate of time-passage to a stationary particle, and T being the rate of a moving particle. And T, of course, has the value expressed in the Lorentz Transformation equation which I gave you before. More specifically, therefore, the actual equation of a body's extension into the Fourth Dimension is

$$w=\left(l/\frac{t}{\sqrt{1-v^2/c^2}}\right)t."$$

Again Brockhurst paused and took a deep breath before he plunged anew into his discourse.

"Do you see the implication? It is simply that there is *no absolute* rate of motion into the Fourth Dimension! Time, or more accurately, passage through the Fourth Dimension, as far as concerns any particular body, depends upon the velocity of that particle through space. If its velocity equals that of light, there is no apparent passage of time, as measured from that body. If the velocity is zero the rate of time-passage is at its maximum.

"That idea forms the basis of my time machine. Particles traveling through space at different velocities have different extensions into the Fourth Dimension. The

thing to do in order to travel into the future or the past of a certain world-point is to alter one's velocity with reference to that point.

"The only way in which we seemed likely to accomplish this was through particle vibration. No apparent passage of time can be measured from an atom, or other particle, which does not vibrate. Time becomes inexistent to that particle. Thus a particle which is vibrating at a certain rate has a different space-time relationship than a second particle vibrating at some other frequency. The two particles pass through the Fourth Dimension at different velocities.

"Having this idea in mind, I constructed that electrical machinery which you see attached to the bottom of the plane, between the wheels. That is the real time machine, and it does nothing more nor less than so alter the period of vibration of the protons and electrons composing the plane, its occupant, and the time machine itself, that their rate of progress through the Fourth Dimension can be controlled at will; that is, the plane can be made to occupy different moments of 'time' at the desire of the operator. There! That's the whole long and short of it! The time-traveler sits in the cabin and starts the electric vibrator, regulates its frequency to suit himself, and moves back and forth through the Fourth Dimension, from world-point to world-point, as he lists."

"But why attach the machine to an airplane?" I asked, deeply impressed by Brockhurst's words.

"For safety's sake. This time machine *is* also a *bona fide* airplane, and when traveling through 'time' it is high above ground. Just imagine the sad tale of the time-voyager who makes his journey on the surface of the ground, and upon halting his machine finds himself enclosed in a solid mountain, or resting on the waves of a mighty sea! No—the safest course is to be up in the air when time-traveling, so that upon arriving at one's destination one can move about as one desires, without fear of drowning or being crushed under tons of rock."

For a while we sat and stared at the plane. Then I rose and went over to inspect it.

"Did you ever travel in 'time' with it, Brockhurst?" I demanded.

"No."

I stopped and glared at him.

"Yet you seem pretty all-fired sure it will work. How do you know it will? Your mathematics may tell you it'll work all right, but will it?"

"It will," Brockhurst assured me. "I know. I made a model and sent it into the Fourth Dimension—though I'm not quite sure in which direction—future or past—it went."

"Are you ever going time traveling with this thing?" I inquired, designating the time machine.

"I certainly am!" was the immediate reply. "Tomorrow morning at 9:30 A. M. I set forth into the Fourth Dimension, to take a peek at our little old earth of the future. Be here to see me off, will you?"

"I will—and if it doesn't work, I'll guy the life out of you—don't forget."

And together we returned to the living room.

PROMPTLY at 9:30 the next morning Brockhurst clambered into the cabin of his airplane time machine, closed the door, and moved his hand to the controls. In a minute he was taxying swiftly across the open field behind his house, soon rising into the quiet air and heading eastward. He spiraled up to about a hundred yards above the ground; then I saw a battery of electron-tubes in the time machine on the craft's bottom flash into light.

For a while they glowed brightly as the plane droned along its circular path overhead; but presently I saw that their light was dimming, and that something was happening to the plane. The throbbing roar of its engine was becoming duller—and then before my very eyes the craft grew indistinct and vanished, dissolving into nothingness, like the figment of a dream!

Yet even as the ship disappeared in the empty sky, I heard behind me the sound of a wheeled vehicle racing over the ground; and spinning on my heel I beheld in unutterable amazement, Brockhurst's time-machine roll to a halt a few paces distant! But *was* it the same craft? I peered at it more intently. Yes, it was—no, it was not! Still—! By heaven, it *was* at that! Worn, stained, coated with the gray, impalpable dust of countless centuries, braced and bound together by metal strips that it might not fall apart, still it was the same. In spite of its vastly changed appearance, some inner voice assured me of the fact.

To corroborate my inward assurance, the glass door of the cabin opened, and out clambered—Brockhurst. But how *changed!* Whereas a few minutes before he had been in high spirits, neatly garbed and clean, now his clothing hung in tatters from a bruised, scarred body, covered with red welts and blood-crusted scratches. His face was pale and distraught, smeared with dust and grime, while his hair hung in tangled masses down over his eyes.

"Hullo!" he greeted me as he emerged from the plane. "Still here, huh? I didn't miscalculate any then. Come into the hut. Let's eat. I'm as hungry as a wolf."

First I only gawked at him like a silly fool. Finally I found my powers of speech. "But—but—" I stuttered in utter confusion, "We've just *had* breakfast, Brockhurst—half an hour ago or so! Say—what's happened to you anyway? Didn't the experiment work?"

He halted to stare at me, a funny little smile curling his lips.

"Sure it worked! I'm just coming back from my Time-trip!"

"But—but hell!" I protested, "You just left—not two minutes ago! I saw your ship disappear only a second before this one stopped here behind me!"

Brockhurst sat down suddenly on the ground and commenced to roar. "You ought to see the look on your face!" he gasped at last. "Honest, you look so flabbergasted—!" Anew he broke into laughter.

"I don't mind admitting I *am* flabbergasted," I rejoined dryly, greatly relieved to see that Brockhurst's injuries were not serious and evidently had not affected his spirit. "If you'd be kind enough to explain," I continued, "possibly my bewilderment would be somewhat mitigated."

Rather weakly Brockhurst rose from the ground. He nodded. "Let's go in—I'll tell you all about it," he offered. "Yes, I know I started my trip into the future only a few minutes ago. I saw myself leave. You see, I returned from my time-voyage a few seconds before I began it. Barely had I stopped the time machine and

commenced to land behind you, when I saw myself spiraling up and vanishing into the Fourth Dimension.

"Yes, I have really been in the Future—to the extent of a million years; and I spent a whole night and nearly a day there."

We were now in his kitchen, where he slumped wearily into a chair, while I began to prepare a substantial meal for him.

"The fact that I had nothing to eat during those twenty or twenty-one hours I spent there is what makes me so damn ravenous now. Make it a little snappy, will you please?" This from Brockhurst, of course.

"Keep your shirt on, keep your shirt on," I soothed. "Your grub's coming along now. Go and wash up a little—take a shower—you're positively filthy. Haven't they any baths in the year 1,001,930 A.D.? And put some mercurochrome on those cuts—or iodine, or peroxide, or something."

Obediently Brockhurst half stumbled into the bathroom, whence I soon heard the rush of water issuing. Presently my friend's snorting and blowing became dimly audible through the heavy door, and when, five minutes later, he emerged clad in a heavy bath robe, he was to all appearances a new-made man—fresh, clean-shaven, and humorous; my genial host of the earlier hours of the day, prior to the commencement of his time journey.

His mid-morning luncheon awaited him upon the kitchen table where he fell avidly to it while I, unable to resist the temptation to join him, sat down to coffee and buns.

Eating was serious business to Brockhurst, laying claim to all his attention; so he did not speak until he had finally shoved away his plate and sat back in his chair, accepting the cigarette I proffered.

"Well," he began then, after a good puff, "I presume you're waiting for my story."

I nodded. "Start from the beginning."

"Very well, then—here goes!"

I shall try here to repeat his tale as accurately and as nearly as possible in his own words, thus employing the first person; but because they seem to be confusing, cumbersome and useless, I shall, with my reader's kind indulgence, omit quotation marks. However, partly because of my own faulty memory, and partly because I found it necessary to revise Brockhurst's original rhetoric in order to make the narrative suitable for publication, I must warn the reader that this rendition is apt to be somewhat colored by my own style of expression. I am confident, though, that my reader will pardon this slight deviation from the original form. This, then, is Brockhurst's story of his voyage into the Year of Grace, 1,001,930:

AS the solid earth of my private landing-field sloped away rapidly below me, swinging around in a mighty circle as my plane spiraled upward into the mid-morning air, I must confess that all varieties of strange doubts assailed me concerning the unparalleled venture upon which I was embarking. Was it not, I questioned myself, the height of folly thus to tamper with the infinite mysteries of Time and Space—to thrust myself through the coming centuries to a period yet unconceived, with conditions still unconjectured? After all—would the experiment prove successful? To be sure, I had sent a small model of my time machine into the Fourth Dimension; but so paradoxical, so grotesque, so unreal did the entire matter appear that my reason refused to accept the testimony of mathematics and experiment. And granting that success *did* attend my hairbrained undertaking, what circumstances, what occurrences awaited me in the distant eon I was setting forth to visit?

Might I not come to a period where human life was impossible on the world? Or might I not enter an era when humanity was subjugated by some mightier type of life? Might not I perish in the course of my time-voyage, or in the age I was intending to visit? Would I ever return to the present?

I had already closed the switch that started the time-accelerator attached to the plane, but so strongly did these various questions prey upon my mind that I was sorely tempted to open the circuit again and abstain from my foolhardy idea of flying into a future era. Yet, as my hand lingered on the insulated handle of the switch my eye caught something in the serene blue heavens to my left. I looked. First only a dim, indistinct blur was discernible; but swiftly it materialized into a definite, concrete shape—it was an airplane, and between its landing-wheels I descried a compact machine, which even at that distance, I recognized as a time-machine. *My* time-machine, attached to the very plane in which even now I rode! Evidently, then, I *was* going into the Fourth Dimension and I *was* coming back—for had I not just seen myself return out of the Fourth Dimension, and commence to glide down toward my own house?

That decided me. All my doubts were answered and allayed. All would be well. So I turned the dial that regulated the vibratory rate of the time machine and my plane, and in a few more seconds I was slipping swiftly into the Future.

Paradoxical? I should say! I had seen myself return from my time-trip *before* I had started it; had I *not* seen that return I would *not* have commenced that strange journey, and so could *not* have returned in order to induce me to decide that I *would* make the journey!

When the time machine beneath the fuselage of my plane was fairly in action the world that lay below became a blurred mass of ever-changing shades. The surface of the ground beneath me heaved and swelled like a stormy sea as with the passing centuries its level rose and fell. Gray and silent, like the spectres of long-dead worlds and civilizations, towering buildings flashed into and out of existence! Mighty cities spread and dwindled like fog before the sun. Forests and lakes, rivers and hills flitted through Time below me, momentary landmarks in the course of the ages, that were rushing by my plane. Outside my machine, time was speeding past at incredible velocity, but within my craft it passed as normally as ever.

There was no distinction between day and night. Overhead stretched a deep blue haze, through which a broad, silver-gold band marked the progress of the sun. But the most fascinating thing to me was to watch the progress of the stars. At the speed with which I was shooting through the fourth dimension they showed as fine silver lines circling, curling, spiraling and streaking through the blue skies.

For what to me seemed like about half an hour I maintained this rate of passage along the fourth dimen-

sion; then at length I determined to halt my machine and inspect the world of the future.

Before the start of my journey I had set my automatic controls to stop after the passage of one million astronomical years, and as the figures on my dials neared this number I commenced to decrease the vibrational action of the time-accelerator, slowing down my headlong flight through time, until, when my instruments registered the passing of one million years, I threw open the switch and came to a halt in the fourth dimension—or to be more precise, reduced my velocity through it to that with which you are moving through it. Then I gazed out of the plane to see what appearance was presented by the world of 1,001,930 A. D. And what a scene I looked upon!

Fading away to the horizon on every hand stretched a vast, level, sandy plain, bathed in the reddish light of the low-hanging afternoon sun. A range of low, crumbling red cliffs lay on the northern edge of the world, forming a natural barrier between earth and sky. Between me and the distant cliffs the sandy plain was dotted with immense green things of globular appearance, which I took to be plants of some nature. This assumption was soon to be verified.

Then as my craft circled around to head south my eyes discovered the most interesting thing of all—there below and before me, its hither edge not more than a mile distant, sprawled a mighty city of titanic, blue stone structures! Grim and massive, like medieval feudal castles, save that they were more squat and solid in appearance, hundreds of those great buildings stood silent and sombre in the bloody glow of the dying sun. No sign of life could I detect in their vicinity—no hurrying throngs, no wisp of smoke, no sound of traffic or industry. To all appearances the city was deserted.

Shutting off the motor of my plane, I descended toward the city in a long, gentle glide, intently studying the strange structures as I did so. The conviction that the city had long been forsaken and crumbling into decay became ever stronger as I neared it and the edifices at its edge became more distinct. Yes—for decades, possibly for centuries, few if any living beings had occupied that once mighty center of a vanished civilization. Then I slightly drew back the control rod of my plane, the wheels bumped once or twice over the sand, and I rolled to a stop about a hundred yards from the nearest of the massive buildings.

Tentatively I poked my head out of my cabin and sniffed. The air, though a trifle thinner than in the twentieth century, was of a very exhilarating quality, which led me to presume that it possibly contained an excess percentage of oxygen. I could see no form of life about me with the exception of the immense, ball-shaped plants, so I stepped out upon the level sand to meditate upon a course of procedure. Now that I was here in the year 1,001,930, what was to be done?

The air of mystery—of incredibly ancient mystery—which prevailed over the enormous city at my side captured me, so I had little to ponder concerning my immediate course of action. The city stood there awaiting me, and it would be silly to neglect the opportunity to explore it.

Accordingly, closing the door of the airplane cabin behind me, I set out to investigate the silent, ominous ruins that brooded on the desert before me.

On my way, I took occasion to give more careful attention to the scattered globular plants that grew out of the sandy earth. They were, as I believe I have already mentioned, a very dark green in color, enormous in size, ranging from eighteen to twenty feet in diameter. From their bottoms grew hundreds and hundreds of long, thin, delicate pink tentacles that were apparently roots, for they extended into the soil. I observed that the great globes themselves did not rest upon the ground, but were stationed about two or three feet above it, seemingly supported by the countless dozens of pink roots. It appeared ridiculous, however, to imagine that those frail, slender, supple tentacles could possibly support those gigantic globes, so I perforce surmised that the globes themselves were hollow and filled with some lighter-than-air gas—being, in fact, natural balloons anchored by the pink roots. That this supposition was correct I was soon to learn—unpleasantly.

My walk to the city was leisurely and somewhat cautious; I always remained in a direct line with my plane that I might flee to it in the event of necessity, for though I felt certain that no danger threatened from the crumbling city, still I did not blind myself to the fact that there *was* a chance that it was inhabited by creatures who might entertain hostile intentions toward me.

As I have already stated, at the time of my arrival in this future day it was already late in the afternoon, the sun hanging upon the lip of the western horizon. When I was still some fifty feet from the nearest structure—a gigantic, cubicular affair topped by several flat-topped round towers—the last rays of the Day Star faded away altogether, leaving the world in a twilight that swiftly grew into dusk.

At this I halted to reconsider my intention of exploring the ancient city. My curiosity concerning it spurred in me a desire to examine it by torchlight, if necessary, while common sense urged me to refrain from foolish proceedings and wait for the morrow. And while I stood thus deliberating, I suddenly felt a soft, caressing touch upon the back of my neck—and then another upon my cheek.

With a start I spun around, facing my plane—only to stagger back in amazement at what I beheld. Hanging low in the evening air behind and above me was one of the monstrous, globular plants, a mighty dark green ball fully eighteen feet in diameter! Hundreds of its slender, pink, whip-like lashes dangled from its bottom, forming a writhing net of menacing cords, while from among them a long, sinuous green trunk extended from the gas-distended globe to the level sand, its lower end terminating in a sucking, cup-shaped mouth that evidently acted as a natural vacuum-cup to anchor the floating plant to the ground!

A dozen thin pink "roots" uncurled and stretched out toward me, and again I felt their questioning caress on throat, creek and brow. A qualm of nausea, of unutterable loathing, swept over me; then with a low, inarticulate cry I dodged aside to flee.

But ere I had taken a step the floating plant whipped toward me upon its sinuous trunk, and of a sudden I was inextricably entangled in all the hundreds of its disgusting, writhing, snake-like whiplashes—some no thicker than a needle, others more than an inch in diameter and possessed of a strength comparable to that of the boa constrictor!

Like a babe in the arms of a strong man I was lifted

high into the air by the monstrous, malignant plant. With the fury of unreasoning terror I struggled with my gigantic, soulless captor, shouting, biting, wriggling, and kicking with all my power; but my efforts availed me nothing save to exhaust me and enmesh me the more in the merciless grip of those crushing tentacles. My clothes were ripped to tatters, blue swellings and bloody cuts showed on my skin where the rope-like arms of the great plant had squeezed and torn my body. Torn—yes—torn! Several of the tentacles, that strange fight taught me, had fine, needle-like spikes near their ends, which scratched and cut me in dozens of places!

Now I discovered that the monstrous plant had left the ground and was slowly floating upward, while dozens of small, sucking mouths attached themselves to the open wounds of my body, to draw in the life-blood that flowed from them.

A groan of dismay broke from me. Was *this* to be my fate—to die out here in this man-forsaken era, beneath the sucking lips of a vampire that belonged to the realms of hell? No—no! I couldn't die that way. Somewhere I had a large-bladed pocket-knife in my possession; if only I could get it—!

Anew I began to fight and struggle, my hand working gradually toward my right hip pocket. The beast-plant that held me constricted its powerful arms, crushing my ribs together and wrapping a choking tentacle around my neck. Soon my breath was stopped and my head commenced to reel; my vision became blurred and misty; my eyes watered profusely. Lord! I couldn't fight any longer—!

Somehow my fingers gripped the knife that lay in my pocket; with one hand I opened both its blades, and then I started to cut. Vaguely I felt the blades encounter yielding surfaces, and presently the pressure of the entangling lashes began to lessen. At last my right hand was free. Already I hung on the brink of unconsciousness when my knife at length found the pitiless tentacle which was throttling the life from me and commenced to saw upon it. Luckily the strand was a slender one, so it took but a few moments ere it was sundered and the deadly pressure against my throat was relieved. Unwrapping the coiled arm of the plant from about my neck I flung it away, to return then to severing the remainder of the writhing lashes. After what seemed hours of frantic slashing, the strongest of them were cut through, while the lesser of them were not sufficiently powerful to restrain me from breaking loose. Released of their tight clutch I slipped downward through the writhing net and plunged heavily to the sand beneath—free!

During the course of my aerial battle with it, the flying plant had floated a number of yards eastward, ascending to an altitude of eighteen or twenty feet. My drop of some twelve feet to the smooth, packed sand underfoot had considerably shaken and bruised me, leaving me trembling and exhausted as I lay half dead upon the ground. My teeth chattered in my shuddering, as I thought, with cold sweat exuding from every pore of my body, of the grisly fate that I had just escaped by the barest of margins.

When I had slightly recovered my breath and strength I grasped my knife and staggered giddily to my feet. Then I turned to the time machine resting upon the desert a hundred yards away.

But I had not taken two steps in its direction when I halted, my heart leaping. Clustered around the plane, their long, pink, snake-like tentacles running inquisitively over it from end to end, were fully a dozen of the titanic globular plants. Others hung in the air over it, or between me and the plane, while several were drifting slowly toward me!

I shouted hoarsely, then turned about and fled precipitately to the shelter of the nearest great building that loomed ominously out of the gathering gloom. Here I stumbled up a low series of steps and plunged through a rectangular, crumbling stone aperture that gave entrance to the structure. Within, I found myself in a long, dust-covered corridor, dimly lighted by a row of small, grimy, luminous glass globes. That the place had been in disuse for a long period was amply testified to by the cracked walls, the many broken lights, and the gray dust that lay inch-thick upon the uneven floor.

Turning into the first doorway at my left I entered a dimly-lighted rectangular room of sizable dimensions, sparsely furnished with an age-old table and a few chairs, while against one wall stood a low, broad couch piled with ancient cloths. Apparently in some bygone day this had been the apartment of some long-dead inhabitant of this desolate, decaying city.

In the nearest chair I sat down to speculate. The situation in which I found myself certainly was not an enviable one. I was without food or drink in a world-old pile of ruins where there possibly existed not a single drop of water or a crumb of bread. Weapons I had none save my puny pocket-knife, and surrounding the city on every hand were countless hundreds of immense, formidable vampire-plants, any one of which stood an excellent chance of bringing about my doom. My precious time machine was effectively guarded by those enormous flying beast-plants, so I had practically no chance whatever to reach the plane, let alone escape with it.

Yet—I *would* escape with it, for all that. It was so decreed. Had I not, with my own eyes, seen myself appear out of the fourth dimension back there in the Twentieth Century, and glide down to my landing-field? Surely then, I *was* destined to return to my own age safe and sound.

Just then my ears caught a soft, stealthy sound behind me, like the tread of a padded foot. With thumping heart I spun around in my chair, my imagination picturing weird and terrible creatures creeping upon me from behind. But the very fact that my eyes awaited some amazingly unusual entity, some awful thing of monstrous form, caused me to be only the more astonished at what I beheld, for that which met my gaze was the most commonplace thing in the world—it was a man. Yet so incongruous, so utterly foreign did the familiar and commonplace seem in this grotesque, unreal world, that I was prone to attribute his presence to some trick of my own imagination. However, despite all that, he was real.

Old and wrinkled, toothless and bald he was, with a coffee-brown skin whose texture suggested leather. He stood about five feet nine in height, clad in a simple white cloth tunic lashed about his waist by a broad belt from which depended two pockets, one at each hip. The one contained a long knife, the other a contrivance that appeared to be some form of revolver.

A minute passed during which the strange man and I regarded each other in silence. Then he spoke—in

a tongue that despite its odd accent and unfamiliar pronunciation I recognized as English.

"Are you Anton Brockhurst?" were the old fellow's opening words.

At that I almost sat down on the floor. *"What?"* I cried in utter amazement.

"Are you Anton Brockhurst?" he repeated. "You must be. My history tells me that there was but one man alive on earth when Anton Brockhurst came out of the past in his time machine. *I* am the last man! Therefore *you* must be Brockhurst!"

Honestly, you could have knocked me over with a feather. So astounded, so utterly flabbergasted did the ancient one's words leave me that I could but stand and gape at him in thunder-stricken silence. I was gasping like a fish out of the water as I slowly gathered my wits to reply to the old man's speech. At last I was able to articulate.

"What—what—how . . . Yes, I am Anton Brockhurst, but how do *you* know my name?" I stammered. "Have—have we met before? I—I'm afraid I can't place you."

Imagine me jawing such ridiculous rot to a man who lives a million years after us!

The old fellow smiled at my evident perplexity.

"I thought so—I *knew* so," he said. "When I was not yet the last human being on earth I learned from my history tablets, which were written about five hundred thousand years ago, that one Anton Brockhurst, a native of the year 1930 A. D., built a time machine with which he traveled a million years into the future, where he found the Last Man. The Last Man, desiring to see others of his kind before he died, prevailed upon Brockhurst to return with him, in the time machine, into the Past—to the year 502,101 A. D., where the machine's arrival was duly recorded in the histories. When the Last Man was born, half a million years later, he read those histories, and thus he knows now that his rescuer is named Brockhurst. All very simple, is it not?"

Sitting weakly on my chair, I nodded. My mind was tumbling with doubts and wonderings. Once more I was confronted by one of the inexplicable paradoxes of time-traveling. Here this man had learned my name *before* I told it to him; he had learned his own future *before* it transpired, through history books written half a million years before his birth, and yet that future of his could *not* have been written into the histories of 502,101 A. D. if it had *not* first occurred!

Tiredly I shook my head; the riddle was too deep for me. Yes—even for me, the man who invented the first time machine!

"But—but," said I at length, "I don't know if I can take you with me into the Past. My time machine is constructed to accommodate but one person."

"But you *must* take me with you! You *will* take me with you! I *know* it! You cannot desert me here, in this God-forsaken, manless age! Tell me, tell me that you will take me with you!"

"Well, I'll see what I can do," I promised. "But frankly, I don't see how I'm going to do it."

"But you will find a way. The history books say that I *did* come to the year 502,101. I want to see other humans once more before I die. For nearly sixty years I have been the last representative of our kind on the earth. Yes, you must find a way."

"I'll try," I assured him, and for a long time we lapsed into silence.

"Where—where am I?" I finally inquired. "What city is this, and to whom does it belong? How old is it?"

"This is the city of Kur," responded the Last Man, drawing up a second chair and dropping into it. "It is a remnant of the Last Civilization, which began about six hundred thousand years ago and reached its heyday around 550,000 A. D. A hundred and fifty thousand years later, at about 700,000 A. D., it began to decline, and by 900,000 A. D. it was almost completely wiped out. It destroyed itself as all its predecessors, the prehistoric civilizations, destroyed themselves. Greed and avarice, lust for power, oppression of the weak and rebellion of the untutored—it is the same old circle over and over again. They rise, they flourish, and they fall.

"When the wars and revolutions had blotted out culture, art, and science, the peoples of the earth were reduced to the savagery from which they had sprung; and then it was the advent of the Martian vampire-plant that completed the ghastly story by killing off the ignorant, unprotected barbarians who once had been the Lords of the Earth. In the last hundred thousand years the toll of human lives taken by flying plants was so enormous that the perpetuation of the race was placed hopelessly into the shadow. Now you see the result—I am the Last Man. Up to sixty years ago there still remained three or four of us, but the others, too, died of old age or were captured unawares by the floating plants and killed."

"The flying plants—they are of Martian origin?" I asked. The Last Man nodded in reply.

"I have had an unpleasant experience with one myself," I went on; "I gather from their appearance that they are hollow and filled with a lighter-than-air gas."

"Quite so," agreed the Last Man with a nod. "They are filled with hydrogen gas, which they extract from the water-vapor in the air and also from the moisture in the ground. It is their presence which has made a desert of our world. Even our oceans are fast receding before them. In a hundred thousand more years there will be no more water on Earth. They are transforming our entire planet to a vast desert, just as they have transformed Mars to a desert. The gigantic waterways built on their planet by the ancient Martians are covered with huge swarms of these plants, seeking to drain up the last few drops of water so that the hydrogen may be extracted and stored in their hollow bodies. For the same reason they attack animals, or other plants containing water—to suck forth the liquid, expel the oxygen and retain the hydrogen that they may float around more. I wonder to what purpose all their mad blood-greed is. It seems to me that their existence must be as aimless as was that of Man."

"Evidently the fact that you are the Last Man has placed you in a position to judge your species," said I, wishing the old fellow's philosophy were less pessimistic, "knowing the faults and foolish deeds of your ancestors."

The Last Man smirked. "And having nothing to look forward to," he rejoined. "When I am dead—then what? The human race has come and gone, with nothing to look forward to," he rejoined. "When I am dead—then what? The human race has come and gone, with nothing to mark its one-time glory, its might, and its

world importance except a few old piles of crumbling masonry that soon will follow their builders to the primal dust whence they came! Were you a woman, there might yet be a glimmer of hope; but you are a man."

"And glad of it!" I thought.

Aloud I turned the conversation again upon the flying plants.

"You say that these vampire-plants came from the planet Mars. How did that ever happen?"

"Ah! It is suspected that they were deliberately brought to this world during the last Martio-Tellurian war, in 700,000 A.D., by the invading fiends from the red planet! Was ever a more hellish plot conceived? Knowing that our entire civilization, culture and progress depended upon that most precious element, water, the Martians brought along young vampire-weeds from their world and released them upon our own!

"Considering the tremendous rate of growth which the plants have—they develop from seed to maturity in the course of a single day, a condition which was necessitated in their evolution by the extreme atmospheric changes that take place upon their native planet—it is not to be marveled at that in a comparatively short time our oceans commenced to disappear, our atmosphere became dry and moistureless, and our fertile soil changed into an inhospitable, hot red dust. In addition thousands of humans and animals fell prey to the greedy tentacles of the flying vampire-weed. Our nutritive vegetation withered and died away in the dry soil and through lack of rainfall. Is it any wonder, then, that our mighty civilization, which so proudly boasted of conquering the universe, collapsed and decayed before the rudimentary intelligence, or instinct, of the vampire-plants?"

I did not reply, for this topic of the downfall of man had become most distasteful to me, so we sat in silence for a time. Then the old fellow asked suddenly, "Where is this time machine of yours?"

I told him, and upon his request narrated the entire story of my voyage from 1930 A.D. to 1,001,930 A.D.

When I had completed the tale, he suggested that we obtain some much-wanted rest—a proposal to which I readily acceded, being rather exhausted from my vicissitudes since my arrival in 1,001,930 A.D. Accordingly, at the Last Man's gesture, I cast myself upon the broad couch that was his bed, while he, extinguishing the light by pressing a button in the wall, lay down beside me. The last thing I recall before I dropped off to sleep is the Last Man's voice reaching me out of the darkness.

"And tomorrow you will take me with you into the past?"

The old fellow's persistence irritated me. Why couldn't he wait until morning, when I would be in a better condition to think it over? So rather tartly I answered:

"I really don't see how I can do it! Frankly, it's impossible!"

The Last Man said no more, and presently we fell asleep—at least, I did.

ALREADY the sun stood well up over the eastern horizon when my lids slowly opened. I turned my head to see whether the Last Man still slept but found that he had apparently already risen.

Sitting up, I stretched and yawned and rubbed the slumber out of my eyes. Then I rose to my feet and walked across the floor of the chamber to the doorway that opened to the corridor intending to inquire of my strange host whether one might have water wherewith to cleanse oneself and whether anything edible was to be had in the ancient city of Kur.

But the old man was not to be seen in the corridor outside the chamber. So, turning to my right I sauntered along the gallery to the rectangular entrance way, and here glanced cautiously about in the vicinity of the structure. Nothing stirred.

Casting my eyes toward the time machine, which rested on the sand a hundred yards to my right, I beheld a sight that made my heart jump. Scattered on the desert around the plane were a dozen or more great, torn, leaf-like things that I saw were exploded vampire-plants, while a number of others hovered in the air, surrounding the machine. Even as I looked, one of them burst with a terrific noise, just as a toy balloon does when suddenly pricked by a pin. I am quite sure now that I know what caused the plant's explosion. It was the sunlight. Under the growing heat of the sun's rays the hydrogen gas, so greatly expanded within the membraneous, globular bag that finally the thin skin was unable to resist the increasing gas pressure and broke open. The bursting plants scatter afar the seeds or spores, which take root in the soil and grow with incredible speed during the daylight hours. When night comes they break loose from the soil and float up into the air—the huge, bloodthirsty monsters of my previous evening's experience. The next morning the sunlight bursts them again.

Yet it was not this which riveted my attention. It was the sight of the Last Man standing beside the time machine, his revolver-like instrument glittering in his hand. The door of the plane's cabin yawned open, and from the looks of things he had been minutely inspecting the craft.

I shouted at him and waved my arm, at the same time breaking into a run toward him. He shot a hasty glance in my direction; then in rapid succession five flashes of red flame spat from his gun, and at each shot a hovering vampire-plant vanished in a thunderous explosion of yellow fire. In a trice only a few flakes of blackened ash were swirling through the air where previously had hung the grim, flying plants.

The last of them had hardly disappeared when the Last Man ducked into the cabin of the plane, slamming the door behind him. Before I guessed what he was up to, the ship's propeller began to spin (I have a self-starter in the craft so that the pilot can spin the propeller by himself from within the cabin), and when I was still fifty yards distant it was roaring lustily. A moment later the plane commenced to roll off across the sands, gathering momentum as she did so, and as I came to a halt with a dawning realization of the old scoundrel's purpose, she rose gently off the ground and sped skyward in an easterly direction.

A shout of horror, of despair leaped from my throat and an imperative call for him to halt, to return. But I doubt whether he even heard me. A minute later, with sinking heart, I watched the machine become a misty blur in the blue skies overhead and vanish into Time! With a low groan I slumped limply to the desert sands and buried my face in my arms.

What a fate had overtaken me! Here I was marooned in Time, in a distant age of the future, without means of returning to my own era, stranded in a world

of crumbling ruins, of fruitless earth, populated only by the weird vampire-plants from an alien planet and, worst of all—I was alone! *Alone!* That was what made the terrible blow doubly cruel. Had I had even a single companion to share my miserable exile, the overwhelming despair that weighed me down would have been at least slightly mitigated by the consolation of knowing that there was another human being nearby, but to be left thus alone—the *only* creature of my species upon the planet—was almost more than I could bear.

Wearily I raised my head, rose to my feet and walked unsteadily toward the crumbling city of Kur. I did not know whither I was going, neither did I care. Bitter self-reproach filled my mind. I should have promised the Last Man that I would return to the past with him; then he would not have stolen the machine! What a fool I had been in the first place even to think about time traveling! What a misguided ass I had been to start out on this accursed, hare-brained adventure! Why, oh, why had I not obeyed the impulse to remain in my own time? But then—I had seen that time machine appear suddenly out of the sky, back in the year 1930, so it seemed that I *was* going to return. Yet—*was* I? Perhaps my eyes had played me false; perhaps it was not my time machine at all that I had seen, but an ordinary airplane emerging from some wisp of mist that had at first rendered it so indistinct! Or perhaps some scientist of my own age had invented a device whereby to produce invisibility, and attaching his machine to an airplane had rendered the craft invisible. What I had taken to be my time machine had probably really been this machine coming out of its state of invisibility. Or possibly it *had* been my time machine which I had seen, but with the Last Man at the controls instead of me!

No matter which of these possibilities was the true one, the fact remained that my deplorable position was in nowise remedied by this fruitless conjecture. The only thing for me to do in this sad situation was to make it as bearable as I might.

Utterly crushed and despondent, I wandered long through the empty, cracked stone avenues of Kur, my footfalls ringing hollowly—mockingly—as I stumbled blindly along my purposeless route.

Thus it was by pure accident that I meandered into an immense, tottering structure that reared ponderous and imposing, majestic in all its decaying splendor, half a mile or so from the spot where on the previous evening my time machine had landed. From the various features that were in evidence as I entered the enormous circular lobby of the building, it was ostensibly some sort of exhibition palace or museum. Orderly rows of large glass cases stretched away from the central lobby, covered with the gray dust of numberless millenniums and filled with strange and interesting relics of the Last Civilization. To a small extent, these wonderful displays served to assuage the despair that gripped me; but though I attempted to interest myself in the strange, silent machines that filled the glass cases of the nearest row, I was unable to discover anything of their purpose, since their construction was beyond me and I could not read the odd characters of the printed placards posted in the cases.

Slowly I moved along the row of glass cases, many of which were in a serious stage of disrepair, with their fragments of glass and other débris littering the floor before them. Stirred up by my feet, the impalpable dust of long-dead centuries rose in a thick, choking cloud, swirling lazily in the air and sinking down again to the floor when I, who had so rudely interrupted its age-long peace, had passed.

When I came to the last great case in the row, not far from a rotting archway that opened upon a capacious stone court, I checked my progress to stare first in momentary interest, then in incredulous astonishment, and finally in doubting puzzlement, at the single exhibit that reposed within the glass-sided case.

Could it *really* be—? No—no! That was impossible! Ridiculous! Absurd! But still— Frowning, I glared at the thing in the box—silent, motionless, dust-covered and braced with metal bands to prevent it from falling apart—but despite my incredulity I saw that it was really what I thought it to be: *there was my own time machine!* The very plane with which I had come to this far-off age—the very machine that had spanned a million years of time—the very machine with which the Last Man had vanished into the Fourth Dimension not more than an hour before!

So dumbfounded did the cognizance of this truth leave me that I suddenly sat right down in the inch-thick dust that carpeted the floor, blinking with unseeing eyes at the silent machine in the case.

How, in the name of all that was holy, did that time machine get there? Through what queer freak of time had it returned to 1,001,930 A.D. when I had seen it vanish into thin air but an hour earlier? For five long minutes my very amazement kept me from grasping the obvious truth. But at last I saw light. Of course—that was how it worked!

When the brown-skinned Last Man had clambered into the plane that morning after familiarizing himself with its controls, he had flown back to the year 502,101 A.D., just as the history books written at that time had taught him he would. There, evidently, he had ended his days, and the time machine, for some reason or other, had been placed in this museum, to be found by its own builder half a million years later!

Of course that elucidated the entire affair! But my mind whirled as it grappled with the new paradoxes that attended this explanation. It meant that during the preceding night the *same time machine* had been in *two different places simultaneously;* at the one spot it had been in a new, spick-and-span condition while in the other place, half a mile distant, it had been a machine so incredibly ancient that only the metal bands around it served to hold it together! This archaic machine had been standing in this case for countless centuries. All during the time that the Last Man had awaited my arrival out of the past, that he might appropriate my machine, that very same instrument of escape from his eon had been standing quietly in its case, only half a mile away! It had been waiting there *before it arrived there,* yet it could *not* have waited there if it had *not* arrived there first! What would have occurred, I wondered, if the Last Man had returned to 502,101 A.D. with the machine that already stood there in that case? But he couldn't have done that, for then he would have been taking the time machine out of its location long before it arrived at that location, and I, after arriving in 1,001,930, would have returned to 1930 with the original, new machine; so I could not have left it in 1,001,930 that it might go back to 502,101 A.D., where it could be put into a museum case for the Last Man to find. My brain reeled groggily at this tangle of contradicting facts and common sense.

At length a doubt crept into my mind among my musings. Would this old, decrepit time machine, so long out of use, operate?

I rose and kicked at the glass wall of the case, shattering it into a thousand fragments. Then I stepped into the case and carefully examined the plane and the time machine. The first glance into the cabin assured me that it was indeed my own machine, for engraved upon the metal-work within the cabin I found my own name and the serial number I personally had put there.

Beyond a few necessary minor readjustments, nothing appeared amiss with either plane or time machine, save that both were fearfully dry and in need of oil. Therefore, breaking out one entire wall of the exhibition case that the machine might pass through, I rolled it out of the case and upon the stone courtyard outside. Returning then to the museum, I searched about for three long hours until in hermetically sealed cans I found oil and gasoline, water, grease, and alcohol. These containers I opened with the tools that I found still in their proper place in the time machine. It took me nearly the whole afternoon to get the motor of the plane and the time machine into working order, but at last the task was done. Clambering into the cabin, I started the two motors and was soon skimming across the stone courtyard of the museum, presently rising and spiraling upward into the blue firmament. The plane was in anything but perfect condition, but it satisfied its purpose.

When I was a hundred yards above the paved square I manipulated the controls of the time machine until in a minute only a misty blur showed beneath me.

Soon the decreasing numbers of the meters warned me that I was coming close to 1930 A.D., so I commenced to decelerate my backward flight along the Fourth Dimension more and more, until at last, when my instruments registered zero, I stopped altogether and began to glide down to the welcoming field behind my home. As I descended, I looked into the sky ahead of me. There I saw a plane spiraling upward into the heavens—*my* plane, with *my* time machine attached to it. A moment it swung around, became a blur in the blue heavens and was gone—into the future—to the year 1,001,930 A.D.—upon the weird, paradoxical voyage from which I had just returned!

Paradoxical? My dear fellow, the Einstein Theory is full of apparent paradoxes, yet to him who understands it there is no inconsistency whatever. Give me another cigarette, will you, Frank?

THE END

What Do You Know?

READERS of AMAZING STORIES have frequently commented upon the fact that there is more actual knowledge to be gained through reading its pages than from many a text-book. Moreover, most of the stories are written in a popular vein, making it possible for anyone to grasp important facts.

The questions which we give below are all answered on the pages as listed at the end of the questions. Please see if you can answer the questions without looking for the answer, and see how well you check up on your general knowledge of science.

1. What was the first steam engine recorded in history? (See page 869.)
2. What very modern steam engine is of the type of the first one of many centuries ago? (See page 869.)
3. Was atmosphere pressure ever used to actuate an engine? (See page 869.)
4. What was Watt's great invention? (See page 869.)
5. What is the general statement of the second law of thermodynamics? (See page 869.)
6. If a reaction driven airship had to discharge projectiles or their equivalent from her bows, what could she do to maintain her speed? (See page 876.)
7. How could an opaque black object in space be detected by the telescope? (See page 877.)
8. Can you describe the relations of the cycles of animal and vegetable processes? (See page 878.)
9. What are the names of the satellites of Mars? (See page 887.)
10. Where does the nearer moon set on Mars? (See page 887.)
11. What character of storm do astronomers believe they see upon Mars? (See page 890.)
12. What planet can claim the earth as its nearest neighbor? (See page 946.)
13. What is the composition of the air? (See page 948.)
14. What might be the effect upon the composition of the air of covering the earth's surface with buildings? (See page 948.)

COMING NEXT ISSUE!

"Television Hill"

A new serial

by

George McLociard

The Black Hand

By Charles Gardner Bowers

(*Continued from page* 911)

bone pegs and drill, Miss Hinton, please. Ah! they fitted perfectly. And now some plain catgut suture—it will be completely absorbed by the body in a week or so—to sew the periostium together. Yes, this will promote the rapid union of the bones. Some more fine silk for the nerves, Miss Hinton; we shall take the radial nerve first. And now to the median. We must be very careful about it, also, as it is one of the chief nerve supplies of the forearm and hand. No, the silk suture will not be absorbed but it is so small as to cause very little trouble, if carefully used. Only a few nerves left now. —ah! we have finished with them. The muscles are going to be easy. There, nothing is left but the skin. We will use clips on that Miss Hinton, they leave less disfigurement than silk skin sutures."

The clips were nothing more than small strips of metal half an inch long and a quarter of an inch wide with a sharp projection at either end. They were fastened in the skin by bending with a pair of metal tweezers and held the cut edges together in much the same manner that similar types of paper clips hold sheets of paper together.

"Dr. Aquino, I think you had better apply a cast. I am sorry I cannot remain to assist you, but I have an appointment for a consultation at eleven o'clock." And Dr. Evans took his departure.

The cast was applied, and as Van Puyster was taken to the surgical ward of the hospital, the negro, still under anesthesia, was turned over to the prison officials.

Two weeks later and the arm was healing rapidly. Two years later and complete sensation had returned. Five years later and the black hand was painting masterpieces, but Van Puyster always wore gloves.

* * *

CASE REPORT OF PATIENT NO. 5026.

By Dr. J. Roy Hopkins

AT the September meeting of the Shelby County Psychiatric Association I gave a preliminary report of a case which I believe to be unique in the annals of modern psychiatry. As that report was made over eight months ago, I wish to present here a more detailed account of the case, with its recent developments, and for the benefit of those of you who were not in attendance at that meeting or may have forgotten some of the details, I will consider the case from the time the patient was admitted to the Psychopathic Hospital.

History: H. V. P., a native born American of Dutch and English ancestry, age 46 unmarried, white male, was admitted to the receiving ward of the Psychopathic Hospital, July 28, 1941. He was committed to this institution by Judge Lynch, of the Sixth Judicial District, as the jury had found him insane when on trial for a series of homicides of negroes. He came from a first family, his early life was normal, with the exception of a rather violent temper. In his youth he took up art and was rapidly on the road to fame when an accident deprived him of his right arm. He fortunately, or it may have been unfortunate, retained the late Dr. Evans, who performed upon him the world's first arm-grafting operation. It may be well to note here that the arm was taken from a condemned negro criminal. In a few years the patient was painting more marvelous pictures than ever, but some of them bordered on the fantastic. At this time his friends began to notice that his conduct was slowly being altered. He discharged the negro valet who had been his faithful servant since childhood. He would cross the street to avoid passing a negro, and even at the mention of one it could be noticed that his face grew tense and sullen. About this time he had a series of engagements with some very charming young ladies, but each one was abruptly terminated. After this he was seldom seen in society and his paintings grew more grotesque than ever.

It was during this period that he started going out during the night, and on several occasions he was known to have stayed away from home for as many as three days at a time and to have returned at the end of that period with his clothes mud-spattered and torn and in an altogether disreputable state. His man also noticed that these events corresponded with a series of brutal murders. It was after one such event, when the master returned with blood on his clothes, that the new valet made his report to the chief of police. The artist being questioned, readily admitted his guilt and made such statements before the jury as caused them to render the unanimous verdict of insanity.

When the patient was first seen he was nervous and irritable and had a habit of opening and clenching his right hand, which was gloved. He appeared poorly nourished and his face conveyed the impression of one who was constantly besieged by hallucinations. Other than this he seemed to be an average man. His clinical picture presented nothing of interest and will not be discussed here.

When the negro porter brought him his baggage there was another near homicide committed, and but for the immediate intervention of several white attendants the assault would probably have terminated fatally.

His condition grew rapidly worse and the hallucinations increased in distinctness and duration, frequently occurring in the day time. One of his commonest fancies was that he was being pursued by a negro, who was attempting to cut off his arm. This type of aberration is very typical of his kind of insanity. He grew more morose and solitary and under no conditions would he permit an attendant to remove his glove.

In view of the preceding facts, a diagnosis of paranoia was made, and at this time it was suggested that his right arm again be amputated, this time above the region of the graft. However, before this was accomplished he was found dead in his cell, having bled to death from a self-inflicted wound which had severed his *right* radial artery.

Summary: A patient with a negative psychiatric history became criminally insane following a graft of a negro's arm, although the operation was a physical and physiological success. From this we may conclude that it is advisable for a surgeon to consider the mental, as well as physical, aspects of any such similar operation.

THE END.

The Drums of Tapajos

By Capt. S. P. Meek, U. S. A.

Author of "Futility," "The Last War," etc.

Part III

What Went Before

MARISTON, Duncan and Nankivell, all of the United States Infantry, have their doubts as to the advisability of settling quietly down to normal life now that they are about to be released after the war. Willis, a veteran "revolution" man, wherever the chances seemed to be most promising, is called in by Mariston, an old friend of his, and is told by Nankivell (backed by the rest of the boys), that he will finance an exciting revolution anywhere, if Willis is willing to lead them.

Willis, however, has had enough of revolutions to last him a while and suggests something entirely new in the way of excitement.

On one of his return trips from an unexplored region in the interior of Brazil, Willis found a man, in his death throes, who very incoherently related a story and offered a map to substantiate it. Also he gave Willis a mysterious knife, which apparently came from this wilderness in central Para. According to Willis, an expedition into that country would furnish plenty of excitement, and also might prove exceedingly lucrative to all of them.

After several days' deliberation, the four men set out on their new adventure. They arrive in due time in the outskirts of the *tierra prohibitiva*, where they find it almost impossible to get enough Indians to go with them. They finally do get, because of the men's friendship with the master, the services of Pedro, who had gone more deeply into the wilderness than any of the other natives, and returned —though not to tell of it. More Indians were willing to go with Pedro.

Nankivell, during this trip, saves the life of Pedro from a water reptile. In return, Pedro forfeits his life by telling the men his story of the interior, in an effort to make these men give up this mad adventure.

They continue, however, and soon enter the Unknown Gateway, with its corresponding dangers of flying arrows and jungle terrors. By this time they have learned the truth of much of Pedro's story. But the most dangerous signal is the sound that later becomes known to them as "the drums of Tapajos," for this generally heralds at least one death. They have lost all but Pedro and two other Indians of all the men they started out with. When they get off the boats and start afoot, they learn that the poisoned arrow shots that had taken toll of some of their Indians are now used for the purpose of guiding the travelers. Following the directions of the arrows, they soon come to an enormous door, which opens quietly while they are wondering what to do, and Nahum, the Warder of the Outer Gate of the Crypt, appears. The five strangers follow Nahum through the gate and are made comfortable.

After a sumptuous repast and a rest, the "visitors" are taken before the Master and the Council for examination as to their reliability and fitness for remaining among these strange people. They come through the examination with flying colors and are taken to the city of Troyana, where they meet Nahum's granddaughter, Estha, and his nieces Balkis and Adah. The adventurers are initiated into all the wonders and secrets of the government with one exception—The crypt remained a secret even to the highest among them, and only the guardians of the Crypt knew about it. Our travelers are permitted a view of the "Guardian of the Jungle," a saurian, and through Pedro, they soon learn of an incipient revolution. It is during the great ceremony of the year—the Adoration of the Golden Calf, that the excitement starts.

CHAPTER XVII

The Adoration of the Golden Calf

IT was a great relief to leave that place of horror and to return again to the beautiful regions of the blue city. The luxury and high degree of civilization that existed there formed a strange contrast to the barbarism and state of near-slavery that we had just witnessed. I expressed as much to Nahum.

"Brother Duncan," he replied, "I can appreciate your feelings very fully, for at times I have felt as you now feel. It is, even now, a matter of great grief to me and to most of the brethren of the blue degree that such a state of affairs must exist. Many attempts have been made in the past to alleviate the condition of the Bearers of Burdens, but they have been abortive. As a race, they do not have the adaptability, mental capacity, or moral integrity that is essential to the preservation of a high degree of civilization.

"In the past they have been allowed to increase their numbers and to live in a state of independence much greater than they now enjoy, but each time that this is done they have tried to presume upon their privileges before they were able to enjoy them and twice in our history they have threatened the entire downfall of our civilization and the loss of our entire store of accumulated knowledge. Only by the use of brute force have they been subdued.

"These times were before my birth and I have only our written records to judge by, but what I have told you I have gained by close and careful study. It is our hope eventually, by selective breeding, to improve

SINCE time immemorial, man needed some object, thought or being to pin his faith to, in order to carry on constructively. And in the final analysis, it doesn't matter so much whether the fanatic worships the Supreme Being we call God, a Buddha, a Golden Calf or Science. The relative result is equal. It is a fascinating study, this subject of religion—no less interesting because the story is laid in the wilds of Brazil. There is excitement and thrills aplenty in this final instalment.

Illustrated by PAUL

I looked at the stage and saw the cause of his perturbation....

their mentality and consequently their condition, but such a process is slow and to attempt to hasten it would prove disastrous. I will take great pleasure in showing you our records at a later time so that you may judge for yourself. Tonight at the ceremony you may get some insight into their degradation and blood-thirstiness which may tend to somewhat alter your present natural feeling of sympathy for them."

We reentered the garden by the door through which we had quitted it, but there was no one to meet us. Nankivell looked disappointed and Nahum smiled broadly.

"Brother Nankivell," he said, "Estha asked me to tender her regrets that she will not be able to be at supper with us tonight, but she is busy with preparations for the evening's ceremony in which she plays a leading part. My nieces are among her assistants and they will also have to be excused. In your rooms you will find certain ceremonial robes which I ask that you wear. I regret, Brother Mariston, that your robes are incomplete, but your ignorance of the part which you would be expected to play leads me to think it better that you do not wear the emblems of your past grandeur. I have given orders that your evening refreshment be served in your rooms. Kindly join me in an hour."

Our ceremonial robes which we donned after our repast proved to be gorgeous affairs. They were solid blue in color and were heavy with silver embroidery, depicting many familiar emblems, together with some which we did not recognize.

"Pistols, Bob?" asked Willis.

"I hardly think so," said Willis. "I had no chance to speak to Nahum about them and it isn't usually done, you know. We don't want to give offense."

Nankivell and I agreed with him and weaponless we proceeded downstairs to meet Nahum, but his first question told us that we had guessed wrong.

"You have your automatics, of course?" he said as we approached.

Mariston told him of our discussion and decision.

"I appreciate your courtesy," he replied, "but this is a time when they may well be worn. You will observe."

He drew aside his robe and showed us three short thick tubes depending from a belt worn under it.

"These are the nearest thing to pistols that we have in Troyana," he said. "They are electrical in nature and contain a charge of static electricity held imprisoned at a potential of four million volts. Unfortunately they can give but one discharge and then they are useless, hence we carry many of them. Some day soon I will borrow one of your pistols and have our mechanics copy it. Meanwhile, I would advise you to return and arm yourselves."

He explained further when we returned armed.

"It has been over a thousand years since internal dissension has threatened Troyana," he said, "but if it ever comes again, it will come on this particular night in preference to all others. On this night all of the Burden Bearers are assembled together with only a portion of the Craftsmen and Planners. The black robes will outnumber the higher degrees by more than five to one, consequently we always go armed. If the Burden Bearers were to try to revolt, ordinarily we could subdue them in a few minutes by shutting off the air compressors and consequently their ventilation, but tonight they will be gathered in the room with us and this method would not be applicable. This is the one great holiday of the year for them."

"If trouble developed, would Miss Estha be in any danger?" asked Nankivell.

"No, I think not," replied Nahum, "but even if she were, there is nothing that I could do. She is the High Priestess of the Calf and she takes the central part in the ceremony of the Adoration. I also have a part in the ceremony which will prevent me from being with you, but I will put you in charge of some one who will explain it to you."

We entered the underground auditorium and I paused in amazement at the size of it. One end was taken up by a broad stage before which hung a golden curtain. On the floor, directly before the curtain, was a section of seats capable of holding about three thousand persons, as well as I could judge. This was already filled when we came in with men and women attired in yellow robes marked with white embroidery. On each side of this section, arranged somewhat like the boxes in a theatre, was a smaller section in which were seated wearers of the blue. A railing divided these sections from the balance of the room which constituted the main area. It would seat at least twenty-five thousand persons, I am sure. Tier on tier, the seats rose until they seemed endless and it was solidly filled with men, women and children attired in severely plain black robes. Between the black section and the sections where sat the higher degrees, stood a line of guards, some Indian and some Craftsmen, officered by blue-clad Planners. A colorful splash of color was made by a group of about fifty persons, nearly all women and children, who wore robes of a brilliant crimson, heavily embroidered with gold.

THE whole assembly was strangely silent. While those near us sat in more or less relaxed attitudes, the tension that pervaded the black section could be plainly felt. It was evident in the strained attitudes and the thousands of intently gazing eyes.

Nahum led us to seats in the blue section and left us for a moment, returning with the Planner whom we had met in the generator room that afternoon.

"Brother Habbakuk has no part in the ceremonies that follow," he said, "and I have asked him to sit here by you and translate for your benefit, as the ceremonies will be in Hebrew and Atlantean, with neither of which you are conversant."

Habbakuk greeted us courteously and Nahum departed for the regions behind the golden curtain.

"Are you armed?" was his first question.

We assured him that we were and he smiled in a rather shamefaced manner.

"This is the first time that I have worn the blue at an Adoration and I am, perhaps, unduly nervous," he said. "At any rate, it will do you no harm to learn what to do should anything happen. Do you see that doorway to the left of the curtain? That leads into a corridor on each side of which are elevators that lead into the sanctuary. They are of large capacity and are so arranged that raising one car automatically lowers another. If you should have to take to them, enter without fear, close the door and ascend at full speed. Your action in leaving will, in itself, open another car for more persons. Now I will tell you something of what you are to see."

As he paused, a deep sonorous voice sounded from the air before us and he hastily motioned us to silence. I looked around for the source of the voice but could not, for a moment, find it. I looked inquiringly at Habbakuk who pointed toward the stage. Before the curtain stood Zephaniah, his arms outspread and his face raised, speaking. He could not have been speaking loudly but his voice seemed to fill the air and to come from all directions at once. It was evident that he had some sort of a microphonic transmitter before him, which was amplifying his voice so that it filled the huge ampitheater.

"The opening prayer to the God of Fire, whose son the Calf is," whispered Habbakuk.

The effect of the rich sonorous voice rolling out its majectic Hebraic periods in the otherwise deathly silence was impressive to the highest degree. As Zephaniah talked the lights grew gradually dim and my attention was drawn to a brilliant point of light above his head which seemed to grow brighter and more intense and to expand until its radiance filled the whole amphitheater. His voice rolled on and on and it seemed to me that I was floating in the air and I was filled with a nameless feeling of ecstasy. Larger and larger grew the light until it seemed to be pervading my entire being and I floated on waves of majestic sound, buoyed up with the radiance of light. Lighter and lighter I grew——

Habbakuk pinched me sharply and I came to earth with a crash. He gave the same treatment to Mariston and motioned me to arouse Willis and Nankivell. Each of them had his eyes focussed on the point of light above Zephaniah's head and an expression of rapture was on Nankiveli's face. Willis was grinning like a satyr. I pinched each of them sharply and they shook their heads and looked around. Nankivell started to speak but I motioned him to silence and looked at Habbakuk. He glanced at the light and then looked meaningly away. I understood his motion and seized Nankivell by the ear and forcibly turned his head away. For perhaps five minutes longer Zephaniah's voice rolled on and then died away into quiet. Habbakuk shook his head sharply.

"Hypnotism," he whispered. "I forgot to tell you not to look at the light."

As Zephaniah's voice died away I ventured to look again at the light and saw that it was coming through the golden curtain. For a moment there was silence and then a sweet wailing as of wood-winds and stringed in-

struments pervaded the air. Louder and louder it grew and a note of barbarous sensuality crept into it. The curtain shivered slightly and I saw that it was slowly dissolving into nothingness before my gaze and an indistinct image was gradually taking form behind it. It was from a point on this image that the single light, which now illuminated the entire building, shone.

More and more transparent grew the curtain and presently it disappeared and the image stood plain before us. It was that of a calf, monstrous and satanic, eight or nine feet high at the shoulder and constructed apparently of massive gold. Strings of sparkling gems surrounded its misshapen neck and the eyes were huge red stones glowing with an internal fire of their own. From a spot on the forehead emanated the intensely brilliant light which had shone through the curtain.

The air of sensuality pervading the music became more pronounced and a slight stir went through the audience. The music rose to a crescendo of barbaric passion and before the image appeared a figure, apparently materializing from thin air. I gasped and looked again. From the corner of my eye, I saw that Nankivell was shaking his head and rubbing his eyes in a dazed manner. No wonder—for the figure before us was that of Estha; but not the Estha we thought we knew. Gone was the girlishness and graceful dignity of her bearing and gone were the graceful robes in which we had seen her. Her long black hair was powdered with gold and hung free from a fillet, which sparkled and scintillated with the fire of a thousand gems. Showers of glittering points of light, which could only have been diamonds, hung pendant from each side of the fillet flowing over her perfectly molded shoulders and caught in a bunch before her. For the rest, she wore a girdle of jewels over her hips from which depended strings of gems half way to her feet and jeweled anklets.

Nankivell whistled softly between his teeth as he gazed on the vision of loveliness before him and I didn't blame him much. I had realized that Estha was a beautiful girl and a superb specimen of womanhood, but I had not before realized the absolute perfection of her proportions. For a moment she poised there and then as the music grew more sensuous and languorous, she danced.

Softly at first she began but more and more fire crept into her movements until she seemed a wreathing mass of points of fire and represented the very spirit of passion. Faster and higher the notes of the music rose, keeping pace with the fury of the dance. Suddenly it stopped on a discordant note that crashed out, out of harmony with the rest of it, and we came to with a start. Then began the strains of a bacchanale which could well have been played in the temples of Ashtoreth in the height of the infamy of Babylon, that harlot among cities. From the darkness beside Estha materialized other shapes, clad in diaphanous draperies. Among the group of girls I recognized both Adah and Balkis and I heard Mariston's breath hiss out sharply. They joined Estha in a mad riot of motion that surpassed anything that I had seen, even in dreams. Faster and more furious grew the dance and then again came a discordant crash and the dancers froze into immobility on their knees, their arms upstretched in supplication to the horrible image above them.

THE music started again but this time the strains held a note of cruelty and blood-thirstiness. Slowly the dancers moved aside leaving Estha alone before the image and slowly, as though fascinated, she approached it and mounted the steps of the pedestal on which it stood. As she advanced with a langorous and feline grace that seemed to suggest blood and torture, I saw that she held in her hand a naked dagger whose blade glistened in the light. Nahum came slowly into view before the image of the calf and in his hands he held a *naked infant*. Forward Estha glided, her entire attitude suggestive of cruelty and a desire for blood. Nahum handed her the child and she took it in her arms and raised it ceremoniously before the image and then lowered it again. Three times she raised and lowered it and it seemed to me that that accursed image nodded. When this happened, Estha laid the child on the platform before the monster and raising her knife, she brought it slowly down.

"My God!" exclaimed Mariston hoarsely and struggled to his feet, drawing his automatic as he did so.

"Down! Sit down!" exclaimed Habbakuk.

Nankivell was also on his feet and I must have risen, although I have no recollection of moving, for I found myself standing with drawn pistol when Habbakuk shook me. I glanced down at him.

"It's not a child, it's a dummy!" he muttered hoarsely.

"What?" I asked in a dazed manner.

"It's a dummy! Don't let that fool fire!"

I grasped Nankivell by the arms and dragged him forcibly into his seat, while Habbakuk did the same to Mariston. Nankivell tried to struggle but I twisted his gun from his grasp and turned my attention to Willis. I was too late. I struck his arm up just as his gun went off with an ear-shattering roar and his bullet struck the image. With the sound of the gun a haze seemed to clear from my eyes and I saw plainly that what I had thought was a human child was merely a bundle of some inert material wrapped in white. I saw Mariston rubbing his eyes.

The sound of the shot was followed by silence for a moment and then a voice arose from the black section. It rose alone, frightfully distinct in the profound hush, and then arose a roar. I had never heard it before but I knew it for the blood cry of an angry mob. From the black section came a wave of humanity rolling toward us. The line of yellow-clad guards sprang forward brandishing tubes such as I had seen hung to Nahum's belt, but the mob was beyond fear. Forward they surged, sweeping over the thin line of Cowans and Craftsmen and then came a blinding flash and the air was filled with the flash and crash of high tension electrical discharges.

By dozens and by hundreds the oncoming Burden Bearers fell before the flash of guns of the Craftsmen and Planners, but where one fell, a dozen took his place.

"To the sanctuary!" shouted Habbakuk in my ear and turned toward the door he had pointed out earlier in the evening. I turned to follow, but Nankivell was no longer by my side. I turned to look for him and saw him half a dozen tier of seats below me fighting his way toward the stage, Mariston at his heels. There was nothing else to do, so I took out after him as fast as I could go.

"Don't shoot, Dunc," shouted Willis in my ear, "we may need every round for close quarters."

"Frank," I shouted as I reached him, "you're headed the wrong way! Come back!"

He shook himself free from my restraining hand and

pointed toward the stage as he fought his way forward.

"Estha!" he shouted back over his shoulder, "she is cut off! We've got to get to her!"

I looked at the stage and saw the cause of his perturbation. Estha stood alone before the image and already the oncoming black wave was between her and her line of retreat. Forward we made our way, blinded by the flashes and deafened by the roar of the electrical discharges. We reached the stage, but to our dismay, it was ten feet above our heads and the smooth polished surface offered no handhold. We were stopped for a moment but Mariston sprang forward and put his back to the wall.

"Up with you, Frank!" he cried.

Nankivell ran forward and stepped in Mariston's cupped hands. Mariston gave a tremendous upward heave and Nankivell jumped and between their efforts, he rose high enough to get a grip on the stage above him. I hastily put my shoulder under his foot and in a moment he was lost to view.

"Catch hold of me, Dunc, Ray next," said Mariston.

I stepped beside him and between us we hoisted Willis to the stage. In a moment he was on his stomach leaning over to grasp my hand and I joined him. I dropped prone beside him and we caught Mariston's hands and hoisted him just in time to escape having his ankles grasped by the first of our pursuers. We dragged him up and I arose and looked around. *The stage was empty.*

"Where is Frank?" I cried.

"This way," cried Mariston, "I saw him go behind here."

I followed him, but Willis was an old fighter and he stayed behind for a moment, long enough to shoot the first two of our pursuers who gained the platform, thus giving us a moment of respite. Mariston and I rounded the platform on which the image stood and before us we saw an open doorway. Into the darkness we plunged followed closely by Willis. As we did so, a flash of orange light stabbed the darkness and a bullet whistled past my ear.

"Frank!" cried Mariston as I was about to return the fire.

"Bob!" came a welcome answering voice and in a moment we were beside him.

"Where are we?" asked Willis.

"I don't know," he replied. "Just as I gained the platform, I saw a figure that I am sure was Estha disappear behind the idol and I followed."

"Dunc, you know how to shut that door, don't you?" asked Willis.

"I think so," I answered.

"Then shut it and keep those hellhounds out," he ordered.

"Have you a match?" I asked.

Mariston lighted one and I hastily looked for one of the concealed emergency levers which Nahum had shown me that morning. Fortunately I found it and the door rose with a crash just in front of our pursuers, leaving us in total darkness.

"Now what?" asked Mariston.

"Go ahead," said Nankivell eagerly, "Estha went this way."

"If she did, she's probably safe in the sanctuary by now," I replied. "She knows the roads here. We should have thought of that and made our own escape while we could. She probably stood there as a decoy to draw the attack and enable the rest of us to get into the elevators while she had her own way of escape open all the time."

"That's probably true," said Mariston, "but all the same, I don't blame Frank at all. If it had been Balkis instead of Estha, I expect that I would have led the way. The question now is, which way shall we go?"

"There's only one way," replied Willis, "and that is straight ahead. We can't go back and one way forward is as good as another. It will be just a matter of luck where we land anyway, my sense of direction is no good underground."

The truth of his statement was too self-evident to merit discussion and we assented to his program.

"Let Nankivell lead the way," directed Willis. "He might possibly hit something ahead of him but after that shot he made when we entered I don't care to have him behind me if any shooting starts."

"Righto, old top," laughed Nankivell. "Still, you had better be glad that I can't shoot. If I could, our number would be one less right now. Come on, boys, forward march, and devil take the hindmost."

With pistols drawn and ready, we followed him into the darkness.

CHAPTER XVIII

Pedro Pays His Debt

I HAVE no very clear idea as to the distance that we walked before we encountered an obstacle. It could not have been very far, but in the darkness and absolute quiet through which we moved, it seemed interminable. My nerves were getting more jumpy every minute, and I expect that I sprang three feet when there was a crash before us followed by Nankivell's voice raised in a howl of pain.

"What is it, Frank?" asked Mariston anxiously.

"—— —— ——!" exclaimed Nankivell luridly. "I've come to the end of this benighted passage and I rammed my head into a stone wall."

"Oh, is that all?" replied Mariston in a relieved voice, "I thought it was something serious."

"It's serious enough to suit me," retorted Nankivell. "Have you any more matches?"

"No, I used the only one I had when Dunc closed the door," he replied. "Who has some?"

"I have two," I said after I had searched the pocket of my pistol belt.

"Only two?" cried Willis, "hasn't any one else any?"

A silence answered his query.

"We'll have to save them then," he remarked. "Dunc, you know more about these doors than the rest of us do, see if you can find the button."

I searched by the sense of touch unavailingly.

"We'll have to use one of our matches then," said Willis when I reported my inability to find the lever in the darkness. "Bob, you light it and let Dunc stand by to get the best advantage from it."

The light flared up and I searched frantically for some sign of a lever which would open the way before us. Not a thing could I find and the match flared up and died.

"It may be a door that will open only at a vocal command," I ventured, "Nahum told me that there were some without emergency levers at places where Burden Bearers were commonly employed."

"This may be one of them," assented Willis. "Well,

the best thing for us to do, so far as I can see, is to go back the way we came. We had better separate and go two to a side. In that way we may find an intersecting passage that will lead us somewhere."

"How far is it back to where we entered?" asked Mariston.

There was a moment of silence.

"Darned if I know, Bob," said Willis at length. "I ought to have known enough to keep track of the number of steps, but I forgot it. At any rate we know one thing, it is straight behind us."

"I doubt that," I replied. "In this darkness, there is little chance that we wouldn't swing off to one side. I rather think that we will find that the passage has curved to the left."

"All the more reason for keeping in touch with the walls," he said. "You come with me, Frank, and let Dunc go with Bob."

As we started back I took the lead, my hand on the wall beside me and carefully counting my footsteps. I had gone one hundred and ninety-seven before the wall suddenly ended. Simultaneously Willis spoke and announced a similar discovery from the other wall.

"Evidently we have hit a right-angle intersecting passage," he said. "The question now is, which way shall we go?"

"I think that Nahum's house lies to our left," I said.

"My sense of direction is no good underground in the dark," he replied. "Even if you are right, I don't think we want to go back there. Judging from such of the scrap as I saw, Nahum and his friends are either in the sanctuary or they have gone west. The place we want to find is the sanctuary and that should be almost directly above us. Let's take the left for our way at a venture until we hit another passage or a door. We'll split and go each side and keep track of our steps as we have been doing."

We changed direction and continued on our way. We had gone two hundred and sixty-two paces when we were stopped by a stone wall.

"What the devil?" exclaimed Mariston, "what do you make of this, Ray?"

There was no answer. He called again and still no answer came to us. We turned and retraced our steps but we found no intersecting passage. Again we called but only silence answered us.

"We must have turned off on a diverging passage," said Mariston. "These darned sandals don't make enough sound on a rubber pavement to be heard a foot away. Take the left wall, Dunc, and I'll take the right, but speak every five paces so we won't get separated."

In this manner we started but after fifty paces we found that our voices were suddenly muffled and we stopped and investigated. Sure enough, the corridor branched off into two directions at a small angle.

"Damn!" exclaimed Mariston. "Come over to me and take the left side of the corridor I am on. You are evidently on the one we followed before."

Again we resumed our advance but within eighty paces the passage branched again. We stopped in dismay.

"*Ray! Frank!*" shouted Mariston, throwing caution to the winds.

WE strained our ears and it seemed that we caught a faint reply. Mariston called again and this time we were sure that we heard an answer, but it seemed to come from behind us. We turned and retraced our steps, halloing from time to time. The answers drew nearer for a time and then started to grow fainter and in a few minutes came from behind us again.

"Either we are completely turned around or else we are in a perfect maze," said Mariston. "Turn around Dunc, we might as well try to follow the sound."

We shouted again and an answer came faintly to us. We strove to follow it but it rapidly grew fainter and we paused.

"The only thing for us to do is to stand still and shout, Bob," I suggested. "They are moving as well as we are and that is probably why we are missing each other."

"You're probably right," he replied. "We'll stand right here and shout at intervals."

We did so and to our relief the answering voices came nearer. Once or twice they started to get fainter but their average distance was steadily lessened and suddenly they sounded almost at our sides. In a few moments Willis and Nankivell joined us.

"Now where?" Mariston asked after we had compared notes and found that the experiences of Willis and Nankivell had been identical with ours.

"Frankly, I haven't an idea," replied Willis. I had a fair idea of about where we were when we started, but I am completely lost now. We may be moving straight back toward the ampitheater. For all that I know, it may be just around the next corner."

None of us had any idea of our location so we set forward at random, two on each side as before, but keeping vocal contact. It was well that we did so for in a few moments it became evident that we were in a perfect maze of passages and might very easily be going in a circle. For over an hour we kept up our round of marching and paused at last when we ran into a door marking the end of the passage we had been following. To say that we were tired would be putting it very mildly. When a person has been used to walking with heeled boots all of his life, heelless sandals, even on a rubber flooring, will wear him out in a short time."

"I'll be damned if I know what to do, Bob," said Willis despondently, "I was never more thoroughly lost in my life. Good Lord, look at that! Back! Back and draw pistols!"

"That" was a narrow line of light on the roof before us. As we watched, the crack grew wider and it was apparent that the door ahead of us was slowly lowering. Down it slipped until it had opened a space of about two feet and then the motion ceased. We watched it without moving for a minute and then Nankivell stole silently forward. The rest of us followed at his heels.

We reached the door, the top of which was about three feet above our heads and paused, listening.

A murmur of voices came from the other side of the barrier. Something about one of the voices seemed quite familiar and we strained our ears. Suddenly Nankivell gave a shout.

"Pedro!" he called.

"*Señor* Frank!" came the answer from the other side of the door in what was quite evidently Pedro's voice.

"Open the door, Pedro," called Willis. "We are alone."

"*Señor* Ray," said Pedro, "it will not open more. Can you get over it?"

"Easy," said Nankivell, "get your back to it, Bob."

"Wait a minute, Frank," interposed Willis, "this may be a trap"

"Trap, nothing!" cried Nankivell, "I'd trust Pedro anywhere."

"So would I, but it is possible that he is a prisoner and is speaking under duress," objected Willis.

"Not Pedro," replied Nankivell. "At any rate, I'd just as soon be bumped off in a hurry as starve to death in this damned dungeon. I'm going over."

Mariston placed his back to the wall and, aided by the rest of us, Frank scrambled up upon the door, which like most of the Troyana doors, proved to be about eight feet thick. He crawled forward and looked over the farther edge and then crawled back.

"Come on, fellows," he said, "it's Pedro all right and he's alone."

In a few moments we were beside him and together we crawled to the far edge and dropped down. Pedro fell on his knees and tried to kiss Nankivell's hand, but Nankivell forstalled him and insisted on shaking hands, to Pedro's embarrassment.

"How on earth did you find us?" Mariston asked.

"*Señor* Bob, although you did not see me, I was among the guards in the big room when the great magician prayed. I had seen medicine men work before, so I shut my eyes and my ears and he had no power over me. Then I saw the white Goddess dance and pretend that she was making a sacrifice. Then I heard *Señor* Ray's gun and then all fought and I tried to join you. I saw you climb up on the place where the God was and follow the white Goddess, but I could not get up there without aid and I was swept away by the others.

"The black robes do not hate us of the Indian tribes and none offered to do me harm. Besides, they know that we all carry poisoned knives, and it may be that they avoid us because they wish to live and not because they love us. When you shut the door in their faces, those who were pursuing you came back and said that you were in the labyrinth and could never escape and that they would hunt you down at their leisure.

"When I heard these words, I took one of the black robes who seemed to know that of which he spoke and I drew him to one side and pressed the point of my poisoned knife against him and bade him to follow me without crying out. When we were away from the crowd, I asked him of another entrance. He said that there was none and I told him that then he must die. Then, since he saw that I meant what I had said, he remembered another way into the labyrinth and he led me to this door and told me that you were somewhere on the far side of it. He did not know how to open the door, so I took him away a distance and killed him.

"When I had cleaned my knife, I went back to the hall and brought with me another black robe to this spot. He knew how to open the door and he tried to do so, but it would open only a short distance. He said that the great ones above had so fixed it and that none of the black robes could do more than he had done. So I took him away a distance and killed him and then came back, thinking how I could get over it. I prayed to the *Great Spirit* and to the God of this place in the voice that is bidden for each. When neither answered, I made a powerful medicine and prayed to each of the Gods in turn, one phrase to each, and each in a different voice so that they would think that each was being supplicated by one of his worshipers and aid one another. My prayer was answered, for while I was praying I heard your voice. Since the Gods had answered my prayer, I thanked them and spoke to you. That is all."

"That's enough!" cried Nankivell. "That is more than any one of us could have done. You are a real hero, Pedro. Now where shall we go? Do you know the road to the sanctuary?"

"No, *Señor* Frank, but I know the road to the buildings where the Indians sleep. There my countrymen are and there not even the black robes would dare to try to take you."

"I guess we had better go there and work from there as a base," said Mariston. "I hope we don't meet any of them on the way."

"I have an idea," exclaimed Willis. "Pedro, where are those two bodies?"

"But a short distance away, *Señor* Ray."

"Fine," he replied. "You fellows wait here. Pedro, come with me."

They were gone for perhaps ten minutes and returned with *four* black robes and sandals to match.

"Put these on," directed Willis.

"Where did you get four?" I asked.

"Don't ask questions," he retorted. "Pedro still had his knife and I had my strength and it was their lives or ours. Get them on and let's go."

We made short work of doffing our ceremonial blue robes and donning the black ones and, attired as four Burden Bearers and one Cowan, we set forth under Pedro's guidance.

FOR perhaps half a mile we pursued our way through tortuous corridors, meeting only a few doors which I opened without trouble. We met no one and we were beginning to breathe easier, when a sound reached our ears that stopped us in our tracks. It was the sound of voices speaking in Atlantean and they were approaching down a corridor that intersected the one we were in, a few yards ahead. We turned to retreat but there was no cross passage and no door for several hundreds of yards in our rear and the voices were apparently only a few yards from the intersection.

As we hesitated with drawn pistols, a body of ten men in black robes came into sight bringing with them a prisoner. We were not seen for a moment and then their leader looked toward us. He called something to us in Atlantean and I responded in a gibberish which I hoped would deceive him. It might have done so had not his glance fallen on Nankivell's blond head. At almost the same instant Mariston recognized the prisoner and shouted his name aloud.

"Zephaniah!" he cried.

At a word from the leader two of the band hurled the aged Master to the floor and pinioned him while the rest advanced toward us.

"Let them come close enough that you won't waste a shot and then turn loose," said Willis.

We obeyed his instructions and let the advancing men approach to within ten yards before we opened fire. It was sheer murder, shooting down those unarmed men, but there was no time to hesitate and I downed my two without a qualm of conscience. As the last of the eight fell, we ran forward to release the Master.

Nankivell and Pedro were somewhat in advance and had almost reached him, when I saw something that made my blood run cold. One of his captors was holding an electric pistol in his hand and was squinting along it toward Nankivell.

"Look out, Frank!" I shouted, but I was too late. There was a blinding flash and an ear-splitting roar and

for a moment we were blinded. As my eyes cleared I heard the sharp crack of an automatic and saw Nankivell standing unharmed with a smoking pistol in his hand. Again the pistol spoke and the second of Zephaniah's captors dropped. Frank dropped his pistol and bent forward over something on the ground.

I had called to him quickly, but I had been too slow. Not so Pedro, however. He had seen Nankivell's peril as soon as I had and where I had paused to warn him, Pedro had acted to save him. He had thrown himself forward and had taken the charge of static electricity on his own body and had saved his friend.

His whole left arm and shoulder were burned away. This alone had not been enough to absorb the charge, but it had deflected it and it had spent its energy on the stone wall. Sadly we looked at the shattered remains of our faithful friend and guide.

"A faithful servant, brethren," said a deep sonorous voice at our sides and we saw Zephaniah had risen. "Faithful unto death. For such as he, there is a greater reward laid up than for us who wear the blue, no matter how worthily. Brethren, let us kneel and ask that the Great Architect make his example to so ennoble us and to raise in our bosoms such thoughts as will enable us better to aid our fellow men."

In silence we knelt and the solemn voice of the Master rolled out the stately periods and sounding phrases of the oldest prayer in the world. I have heard many prayers in my life; I have heard a solemn requiem mass for the soul of a departed Pope; I have heard a nation weep for a martyred President; but never has a prayer so moved me as that simple yet solemn prayer offered eight hundred feet underground for the sake of a poor savage who had given his all for the master whom he had made his friend.

When he had finished the prayer, Zephaniah remained on his knees for a few moments in silence and then arose.

"My brethren," he said. "thanks to your timely aid, I am still spared to labor for my people. Others may be attracted by the sound of your weapons, so it behooves us to hasten to the sanctuary. We will take with us the body of your servant in order that it may be disposed of with fitting ceremonies. Let us pass on."

Nankivell and I raised Pedro's body and soberly followed the Master, Nankivell's shoulders shaking with suppressed sobs as he walked.

CHAPTER XIX

The Sanctuary

WE retraced our steps for perhaps a hundred yards and then Zephaniah paused and facing to his left, spoke a few words. Before us a door slid slowly down, displaying to our gaze the familiar rows of seats that were characteristic of the conveyances of Troyana. We entered and seated ourselves, laying Pedro's body respectfully on the floor.

"How far are we from the sanctuary?" asked Mariston.

"We are close to the outer edge of the city," replied Zephaniah. "Unfortunately we cannot return by the most direct route for that leads through the amphitheater which is held by the Burden Bearers. We will have to go to a point beyond our destination and double back."

We changed conveyances four times before we entered one which bore us swiftly upward as was shown by the pressure on our feet. Presently the elevator stopped and we were confronted by a row of Craftsmen, who raised electric pistols in a threatening manner, until the color of Zephaniah's robe became evident to them and he was recognized. With a cry of joy, a Planner who was evidently in command of the detachment of guards, hastened forward to greet him.

"Is all well, Tubal?" asked the Master.

"All is well, Most Worshipful Sir," replied the Planner. "Many of our rank have perished, but many have also gained the Sanctuary and are safe. Who be these with you?"

"Do you not recognize our brethren from the outer world?" asked the Master.

Tubal looked at us closely and then hastened to greet us warmly.

"You are welcome, my brethren," he began ceremoniously but Nankivell interrupted him.

"Is Estha safe?" he demanded.

"The grandchild of Nahum is safe in the inner court," replied Tubal.

"Thank God!" exclaimed Nankivell.

"What is the toll of the brethren?" asked Zephaniah.

"One of the Keepers of the Treasure, eleven wearers of the crimson, two hundred, twenty and one of the Planners and eight hundred, thirty and four of the wearers of the yellow, Most Worshipful Sir," answered Tubal.

"Are all needful dispositions made?"

"They are, Most Worshipful Sir."

"It is well. It is my will and pleasure that all the brethren of the blue degree gather in the asylum within the space of two hours that counsel may be taken. This you will proclaim to the brethren that it may accordingly be so done."

"Your order shall be obeyed," replied Tubal with a deep bow and a familiar sign.

"Come with me," said Zephaniah shortly to us, and without words we followed him.

He led the way to a suite of rooms somewhat similar to those in which we had first taken up our abode in Troyana and sank on a divan exhausted. He called out in Hebrew and, when a Cowan answered, he gave an order. The Indian bowed and went out, to return in a few minutes with a pitcher of wine and five goblets. Zephaniah gulped his eagerly and the rest of us were not more reluctant. Zephaniah spoke to the Cowan again. In a few minutes two Indians entered and raised Pedro's body and reverently bore it out.

"My brethren," said Zephaniah kindly, "you have doubtless seen much that puzzles you. I will be glad to answer the questions which are doubtless troubling you.

"There is just one thing that puzzles me," said Nankivell. "We seemed to see Estha prepare to sacrifice a human child before that hideous monstrosity and then later we saw that it was only a dummy and then trouble started. What did it all mean?"

Zephaniah smiled slightly.

"Doubtless you fixed your eyes on the spot of light over my head when I began my prayer?" he asked.

We nodded assent.

"That explains your bewilderment," he went on. "My prayer and the light were designed for one thing alone, to hypnotize such of the audience as were not in the secret. Those who were, looked another way and

stopped their ears. The reason for the ceremony is this. The ancient Atlanteans, from whom the Bearers of Burdens are descended, were a barbarous race who practised human sacrifice, temple harlotry and religious cannibalism. Despite six thousand years of attempts to educate them, we have done little toward improving them and have suppressed the practises I have named only by force. Fortunately we have almost eliminated the worst of the three, for cannibalism is hardly known. Even so, as recently as two years ago, a number of their children were missed and their bones, when found, showed evidence of the horror which had been perpetrated.

"In order to pacify them and make the problem of their control easier, we contrived some two thousand years ago, the Golden Calf and the ceremonies with which it is worshiped. At first we were forced to make actual human sacrifices, but about twelve hundred years ago, the Master, who had an unusually far seeing and acute mind, devised the present ceremony where a prayer with attendant concentration on a spot of light is the first step. This, when properly contrived, has the effect of so hypnotizing the audience that a dummy sacrifice can be carried out without their detecting the fraud. For over a thousand years, no human being has been sacrificed.

"We are always cautious that no extraneous sound interrupts the ceremony and my only explanation of the events of this evening is that the sound of the shot, which one of you fired, broke the spell, and enabled them to detect the fraud. This, showing them that they were being cheated of the vicarious pleasure which they have annually felt in a blood sacrifice, enraged them and brought to a sudden head, discontent which has been brewing for the last thirty years."

"Then Estha knew that it was a dummy?" said Nankivell with an air of great relief.

"Certainly. All wearers of the blue and many of the more advanced of the Craftsmen knew it. There was——"

He was interrupted by the entrance of a blue-clad messenger who saluted and spoke rapidly. Zephaniah's face assumed a look of anxiety and he questioned the messenger sharply. The messenger answered and the worried look on the Master's face deepened. Suddenly he spoke in English.

"Direct Brother Joel to make all haste possible in starting the main emergency generator," he directed, "and have the observation post manned as soon as there is sufficient power. Bid them to report at the asylum within the space of an hour."

The messenger saluted and left. Zephaniah turned to us.

"I must apologize for forgetting that you cannot speak the language of Troyana," he said graciously. "The news that was brought me was ill, but I beg to be excused from informing you at present. The Council will meet in an hour and all news will be laid before them. In the meantime partake of refreshment and rest."

AT his call a Cowan appeared who led us into another room where a meal was served to us and where we had an opportunity to recline on divans and rest our weary limbs. It seemed that we had barely lain down when a messenger entered and bade us to the asylum. We rose and followed him through corridors to the room where we had first been examined. Again the bowing files of Craftsmen opened before us and we approached the doorway. We had no difficulty in gaining admission and after the proper ceremonies took our places.

"It is my order," said Zephaniah when all had assembled, "that the deliberation of this assembly be conducted in English for the benefit of our newly found brethren. This you will proclaim."

The orders were duly repeated and Zephaniah turned to an officer.

"Brother Steward," he said, "report the state of the stores."

"Most Worshipful Sir," was the reply, "the stores are in excellent condition and are in full quantity for a period of seventy years for those here assembled."

"It is well," said the Master. "Brother Armorer, what is your report?"

"Most Worshipful Sir," replied the officer to whom the question had been addressed, "there is an abundance of charged tubes and all else needful for our proper defense."

"Brother Scribe," said the Master, "declare the number of the brethren."

"Of the purple; two; one present and one imprisoned in the Vault, but reported well and safe. Of the crimson; eleven only. Of the blue; two hundred twenty and seven. Of the yellow; eight hundred, thirty and one. Of the black there are none here."

"The report is a poor one, yet better than I had hoped," replied the Master. "Brother Warder of the West, your report."

"It is bad, Most Worshipful Sir. There has been a traitor in our midst."

The Master bowed his head while a murmur of astonishment ran around the room.

"Worshipful Brother Amos, who was deposed thirty-two years ago from the throne which you now occupy, is not in our midst. We thought that he had been killed, but he has been located and has joined forces with the Bearers of Burdens. We cannot see the interior of the Crypt due to its protection, but since the air compressors are already driving air through the underground dwellings, it is evident that he has forced the Crypt before the generators could be destroyed and has them in operation. Although the Crypt is in his possession, the Vault has been closed and he has but a small store of energy with which to feed his generators. Still, with care, it may last him for years, especially as the Bearers of Burdens will now live above ground and the great energy used in the air compressors will be saved."

"What of the Vault?" asked the Master anxiously.

"The Vault is safe. Brother Zerubbabel holds it and he has lowered the emergency doors so that he is protected by miles of rock from the Crypt. There is little chance for Amos to secure more energy when his present store is exhausted."

"That is well," said the Master. "Brother Warder of the West, you will communicate the state of affairs to Brother Zerubbabel and inform him——"

"Most Worshipful Sir," interrupted the Warder, "before you order the expenditure of that amount of energy, hear the balance of my report. Always enough energy has been stored in the sanctuary storehouses to meet our anticipated needs for sixty years. Brother Amos, as you know, had it in his care. He has stolen it from the sanctuary and there remains only base metal and enough units of energy to maintain our observation posts and to supply the ordinary comforts of life for

five years with great economy. If we endeavor to use the projectors, we will exhaust our store in a month."

A dead silence greeted this announcement for a moment and than an undertone of muttered imprecations against the traitor ran around the hall.

"My order is recalled," said the Master. "Let us take counsel. Has any brother anything to offer?"

The fruitless discussion which followed lasted for several hours, but no one had a constructive suggestion to offer. The final conclusion reached was that energy would be conserved in every way possible and that only a minimum of observation should be used and that the laboratory would work night and day in an attempt to find a substitute for the missing material, from which alone, atomic energy could be produced, so far as the science of Troyana was concerned. At length the meeting adjourned with prayer and Nahum hastened up to us.

"My brethren," he exclaimed as he greeted us warmly. "We had given both you and the Master up for lost when you appeared and he related how your bravery and skill had delivered him from the hands of our enemies. There is nothing in Troyana that is not yours for the asking. Zephaniah wished to keep you with him, but my prayers have prevailed, and you are to resume your places as members of my household. Will you come with me as soon as you have received the thanks and felicitations of the brethren? My granddaughter is awaiting your arrival anxiously."

We were dog-tired and we managed to cut short the congratulations and thanks which were pouring in on us from every side and accompanied Nahum. The small suite of rooms to which he led us contrasted poorly with the luxurious mansion where we had formerly been housed, but the warmth of the welcome which met us more than made up for anything that may have been lacking.

As we entered, Estha, again in the blue robes of her rank, ran forward and threw her arms around Nankivell.

"Frank," she half laughed and half sobbed, "I thought that you had been killed. Why were you so foolish as to try to follow me? Didn't you realize that I was safe and knew what I was doing?"

"I didn't think," he said as he drew her closer to him, "All I saw was that you were in danger and I jumped out after you."

"Silly boy," she cried and kissed him. I glanced apprehensively at Nahum but that old gentleman had discreetly looked the other way.

From another room Balkis and Adah entered and thanked us prettily enough for what little we had been able to do, but their thanks had none of the fervor and warmth of Estha's. One would think that Frank Nankivell had done everything.

We sat up most of the night talking to Nahum and we found that the seriousness of the situation had not been exaggerated. Energy in the peculiar form that was adapted to the atomic disintegrators of Troyana was indeed life and death, as well as power of offense and defense, to this people. It was true that their enemies had a larger supply and had also one of the best minds of Troyana to supervise its expenditure, but due to the larger number that they had to provide for and our almost impregnable position in the fortified sanctuary, the situation was really a deadlock. If we could do nothing neither could they.

Such was the situation and such it remained. The first few days were interspersed with attempts on our part, or on the part of the cohorts of Amos, to obtain an advantage, but both were equally unsuccessful, as neither of the two parties was in a position to expend the energy to try a decisive blow. If such a blow were attempted and failed, the attackers would find themselves at the mercy of their enemies and the fight soon developed into a stalemate, each side waiting for the other to make a false move which would leave them at the mercy of their opponents.

ZEPHANIAH did not forget his promise about Pedro. The day after we reached the sanctuary, a magnificent ceremony was held in the asylum, where the Master preached a moving sermon about the virtues of fidelity. He ordered Pedro's body embalmed and placed in a mausoleum against the time when it could be removed and interred in the forest from which he had come. It was a touching ceremony and we all broke down at the Master's words, Nankivell especially, crying like a baby.

Three months passed in this fashion. Willis, Mariston and Nankivell were assigned to duties connected with the defense while I was put to work in the laboratory. My puerile knowledge of the science of Europe and America poorly fitted me to aid in the advanced problems in the constitution of the atom which were being carried out, but I was something of a technician and was able to be of some small use, I hope. I did my best anyway.

Our hours of duty differed and I saw comparatively little of either Willis or Nankivell. I saw Mariston every day and he told me how things were going with the others. Willis was getting more and more impatient for the outside world, but Nankivell would need a team of horses to drag him away, it seemed. He was completely enslaved by our host's charming granddaughter Mariston did not think that Nahum altogether approved of the intimacy and had, indeed, spoken rather sharply to Estha on several occasions and had finally requested Nankivell to cease his attentions. I felt that I was rather more than a friend of the old gentleman and I foolishly enough took it on myself to remonstrate with him about his attitude. I didn't get far.

"Brother Duncan," he said sternly, "you are a good and tried brother and so is Brother Nankivell and to you both Troyana owes a great debt, but there are limits beyond which no one may go. No matter how much Brother Nankivell and my granddaughter may love one another, nothing can come of it. He is of the outside world and she is of Troyana and such a union would result disastrously. Already, in your hearts, you tire of the place and long for greater freedom. Should Estha and Brother Nankivell unite, he would be tied here and in a hundred years or so, he would chafe at his bonds and become miserable, longing for the world he has known, and his discontent would kill Estha. On the other hand, she was born in Troyana and could not live in happiness beyond its halls. Much as I love you strangers that one request I cannot grant."

"You said 'beyond the halls of Troyana,'" I said eagerly, "do you mean that there is a chance of escape from here?"

He smiled in a wry fashion.

"I am right as you can see," he replied. "At the mere suggestion of a chance to leave this city, you are all agog and yet you are better adapted to Troyana than either Brother Nankivell or Brother Willis. Yes,

Brother Duncan, there is a chance, but I can say no more. In due time you will learn if it be the Master's will."

"I thought that there were no secrets from those of the blue degree," I replied.

"None save those pertaining to the Crypt," he replied. "Our entire knowledge is not confined to the operation of a few machines. I can say no more."

I told Mariston what Nahum had said to me and it made us both think. It was, therefore, less of a surprise than it would otherwise have been, when we were summoned to the asylum one evening to an assembly of which we had not been notified. We were told to stand before the altar.

"My brethren," said the Master, "it grieves my heart that you should think of leaving us, for I have come to love you like sons, but Brother Nahum informs me that your hearts are sore for your homes. Is it so?"

We bowed without speaking.

"It grieves me greatly and I would hold you here by love if I could, but I will not hold you here by force. There is a way to return you from here to the place whence you came, although it is known to but few and can be used only by those who are chosen. Also remember that you came to Troyana of your own free will and accord and so the way was open to you. So must you leave, but once you have left the way will then be forever closed to you and yours. Make not your decision hastily, my brethren, but consult one with the other and tomorrow, here, give to the Council your answer. If you refuse, never again will the chance to depart be offered to you. If you choose to go, never again may you return. Now go in peace and may the blessings of the Great Architect rest on you and may his wisdom guide you to a true choice, for my mind is torn and I know not how to advise you."

Silently we saluted and withdrew. Not a word did we speak until we were back in our rooms. Willis first broke the silence.

"Thank God, we are getting out of this hole," he exclaimed heartily. "I am so damned glad to get away that I am resigned to losing that gold plate we saw at Nahum's."

Mariston whistled softly through his teeth.

"What do you say, Dunc?" he asked.

"Well," I remarked cautiously, "there is a good deal to be said on both sides. There is a lot to be learned here and I'd like to stay a few months, or even years, longer, but that is out of the question. Since this is to be our only chance to get out, possibly we ought to take it. I'd like to see Molly again, but on the other hand, aren't we almost in honor bound to stay and see the end of it?"

"Nonsense!" said Willis hotly, "it's none of our fight."

"Shut up, Ray," replied Mariston. "Let each man have his say and then we'll argue it. What is your decision, Dunc?"

"I think we really ought to stick it out, even though I would like to go," I answered with a heavy heart, thankful that Molly could not hear me say it, "I vote to stay here."

"I'm going to stay," said Nankivell shortly.

"Because of Estha?" asked Mariston.

Nankivell nodded.

"That's the very reason why you are going," replied Mariston. "I am the exact opposite of Duncan. I would like to stay but I vote for going and so will you, Frank, when you hear me. I won't stay because of Balkis. A little longer in her company and I wouldn't be able to go and Nahum has shown me very plainly that nothing more tragic than a marriage between one of them and one of us could happen. Neither Estha nor Balkis could live in the world as we know it and be happy and neither of us could live happily in Troyana. Each must keep to his own country, old man. Oil and water won't mix, excellent as each one is alone. No, Frank, you're going out with me."

"And leave her? I will not!" said Nankivell hotly.

"Yes, you will, old man, and for the very reason that now makes you declare you are going to stay. Because you love her, you'll leave her. I'll talk with you tonight and I think that I can make you see it. Dunc, you are free to do as you please, for you have no foreign entanglements. If the rest of us go, will you go or stay?"

"I'll let majority rule," I answered with a heart suddenly lighter.

"All right then, that's settled. We leave," said Mariston.

"You may, but I won't," retorted Nankivell.

"We'll see what you say in the morning," replied Mariston. "Dunc, you and Ray turn in. Frank, you come with me. We are going to thrash this thing out."

CHAPTER XX

Pedro's Body

THE events of the day had naturally excited me and that alone was probably enough to account for my broken rest that night, leaving out entirely the emotions which the possibility of again seeing Molly had raised. Whatever the cause was, I slept very poorly. Whenever I woke, which I did at frequent intervals, I could hear Nankivell and Mariston arguing in the next room. There was no doubt in my mind that the course which Mariston advocated was that of common sense, but I couldn't help sympathizing with Nankivell. I tried to think what my decision would be under such circumstances, but the problem was too much for me. Thankful that I did not have to advise Nankivell, I finally settled myself to sleep with a feeling that the matter was on the knees of the gods.

Neither Mariston nor Nankivell volunteered any information at breakfast the next morning and neither Willis nor I cared to question them. When the meal had been finished Nankivell arose with a muttered word of what seemed to be rather sullen apology and left the room. We turned to Mariston questioningly.

"He's going," said Mariston. "It is a pretty hard blow to him, but I made him see the light. I wouldn't say anything about it to him if I were you. It is one of those things that are better not discussed. He has gone to her."

Nankivell did not return until after supper time and when he did, the change in his attitude was very marked. He had left in the morning with a sullen, rebellious, and rather hopeless air, but he returned almost cheerful. His disinclination to talk about the matter had left him, and he chatted with us in a normal manner and seemed to be almost eager in planning our return. I realized that I ought to keep quiet, but curiosity overcame me at last.

"How does Estha look on our departure?" I asked.

Mariston's fist clenched and he shot me a dark look, but Nankivell answered promptly without a trace of embarrassment.

"She took it rather hard at first, just as I did," he answered, "but she soon saw the force of Bob's arguments. Balkis was there and when she heard that Bob favored our leaving, she sided with him and agreed that the course we were taking was by far the wisest."

For some reason, Mariston did not look entirely happy at Nankivell's words. He flushed slightly and was about to speak when the entrance of Nahum put an end to further conversation. Nahum saluted us affectionately and told us that the Council had assembled and were awaiting our arrival. At his suggestion we donned our ceremonial robes of blue and followed him to the asylum. Our entrance was affected by the usual ceremonies, with which we were by then sufficiently familiar to go through with in Hebrew without assistance. We were conducted to the altar before the Master who greeted us courteously and asked if we made our decision."

"We have, Most Worshipful Sir," replied Mariston who was naturally the spokesman of our party.

"Communicate it to me," directed Zephaniah.

"We have decided, with your gracious permission, to return to the place whence we came," he answered.

"It grieves me greatly so to hear," replied the Master, "and yet I applaud your answer as that directed by wisdom. Brother Nankivell, is this decision made of your own free will and accord, made without outside influence, without fear of punishment or hope of reward and without possibility of future retraction?"

"It is," answered Nankivell promptly.

The same question was propounded to each of us and when we had all answered in the affirmative, the Master announced himself as satisfied.

"In order to teach you the means of departure, it will be necessary to communicate to you certain portions of the Cryptic Degree," he went on. "This will involve taking upon yourselves certain additional oaths, obligations and duties in addition to those which you have hitherto taken and have observed. The assurances which have previously been given to you are repeated. Being thus reassured, are you willing to proceed?"

We answered in the affirmative.

"It is my order that this assembly of Planners be now closed," he proclaimed. "Brother Chancellor, is the Master of the Cryptic Degree within the sanctuary or has he furnished you with orders?"

"Most Worshipful Sir, he is not within the sanctuary and no orders have been received from him."

"Then, by virtue of my authority as the Worshipful Senior Warden of the Cryptic Degree, in the absence of the Right Worshipful Master, it is my order that an assembly of the Cryptic Degree be now opened," he said. "Brother Chancellor, you will clear the asylum of all who have not been exalted. Brother Chamberlain, you will prepare the candidates."

My obligation forces me to draw the veil over the elaborate and very impressive ceremonies that occupied the next three hours. Suffice it to say, that in the end, we found that we had learned many things. Not only had we learned how we were to leave the city, but we had learned something that was of the greatest scientific interest, to me at least. The peculiar form of energy that was used in the atomic generators of Troyana, the scarcity of which was causing so much concern, was the comparatively common element, cobalt. There was only one source of this material within the limits of Troyana and that was in the Vault, which was always guarded by one of the three Keepers of the Sacred Treasure.

At the conclusion of the ceremonies, Zephaniah gave us our final orders.

"My brethren," he said, "the night has far advanced and the rest of it and the day are given you for repose and refreshment. Tomorrow night at the second hour before dawn, you will come here prepared to depart. As a slight token of my esteem and gratitude, the Steward will bring to each of you a small package. In it you will find enough diamonds to enable you to live without the grim necessity of manual labor, as becomes nobles of Troyana in the outside world, to which you are going. I trust that you will use the leisure which this gift will grant to you, in labor for the good of mankind, more especially your brethren. Is there any other thing that is within my power to grant that you desire?"

"There is, Worshipful Senior Warden," replied Nankivell. "There reposes in the sanctuary the body of a dear friend who gave his life for me and also, in a measure, for you. I would like to be given his body so that I may take it with me and lay it respectfully to rest in the forest whence he came."

"Your request is granted," answered Zephaniah. "It is such a request as I would expect to hear from you, Brother Nankivell. Do any other of you have a desire? Then may the blessings of the Great Architect rest on you and on us all and may you go your ways ever in peace. Amen."

"So mote it be!" came a deep-toned chorus from around us.

The day passed rapidly. It took time to go the rounds of the sanctuary and bid farewell to our many friends in Troyana and many of the farewells were sad and hard to say, for we had made real friends there and we all knew that it was a last farewell, for it had been repeatedly told to us that there was no retracing the route which we were taking.

We changed our Troyana robes for the tramping garments in which we had entered the city and made up our packs, substituting for the missing *sarque* and *guarana,* some of the marvelous concentrated foodstuffs of which the sanctuary contained so large a store. When we were ready for travel and had tested the weight of our packs, Willis was disposed to object to the addition of the weight of Pedro's body to our load. Mariston was non-committal, but I sided strongly with Nankivell. I felt that he was giving up enough as it was and that, if he felt like taking Pedro along, that that much was due him. Anyway, Nankivell flatly refused to move a step without it, so Willis was forced to give way. He did so and agreed to take it, at least as far as the jungle, although he grumbled a little at what he termed 'sentimental damnfoolishness'.

AS midnight approached, Nankivell left us and went to prepare Pedro's body for the trip. He declined my proffered assistance and I stayed with Mariston and Willis, who were engaged in going, for the twentieth time, over our return route after we had left the road. Our instructor was Hosea, the Junior Deacon, who had, at one time, spent forty years in the jungle as Warder of the Outer Ways. With the aid of his detailed instructions, a map he drew, and our compasses and pedometers, we had little fear of going astray. In addition he gave to us a sign which he assured us would be heeded by the Cowans who guarded the jungle trails and tell them that we had a right to pass and repass at will. At last the hour arrived.

"Dune, come and help me with the body, will you?" called Nankivell from the next room

I went to him and found that he had wrapped the body in many folds of linen and had tied it securely The weight rather surprised me, as I had an idea that an embalmed body was always lighter than a living one, but I accounted for the weight by the large quantity of wrappings he had put on it. He took the head and I the feet and we followed our guides to the asylum which had been cleared of all save those of the Cryptic Degree.

Our final farewells and prayers were here spoken and the Steward handed to each of us the packages which Zephaniah had promised the day before When all was ready, we stepped back from the altar and Zephaniah, with a final word of prayer, spoke certain words. In response to his commands, the altar revolved slowly to one side and we followed Nahum down the flight of stairs which the movement had revealed. They were thick with dust of ages and small wonder, for we had learned the night before that they had not been used for over six hundred years. I tried to count steps, but at somewhere around five hundred and fifty, I lost count. Down and down we went, into the very bowels of the earth, stopping now and then to rest. The weight of Pedro's body became a heavy burden but Mariston and Willis relieved me from time to time. Exhausted as he must have been, Nankivell refused to surrender his place to anyone.

At last we came to level ground, or rather a level passage in the rock, and Nahum told us that we were below the level of the Crypt. For perhaps two miles we followed him along the passage, which was dimly lighted by a hand lamp which he carried, and then, at a word from him, we paused. He advanced to the wall and manipulated some dials and levers and we saw on the wall before us, an empty corridor. Rapidly he searched the rooms and corridors adjacent to the one we had first seen and then spoke.

"When the door opens, move rapidly," he directed. "We must move some twenty yards and be in the conveyance that will take us to the entrance where you first saw me before we are detected The corridors approaching the one we will enter are empty now but some may be coming from a distance and, as you know, our conveyances travel rapidly."

Using the same words with which Zephaniah had moved the altar, he lowered a door before us and strode rapidly forward The door closed behind him of its own volition and in a few moments we were seated in a conveyance and, although we knew that we were going principally in a forward direction, the slight grade and the rapidity of our motion gave us the impression of dropping. Presently this feeling passed and we felt that we were rising again. The car stopped and a door opened and we stood again in the corridor where we had first met Nahum several months before. It seemed to me that only a few minutes had passed and I had to shake my head to make me realize what we had been through. We were not yet clear of the confines of Troyana and already its wonders seemed like a dream.

The door to the outside world opened at Nahum's command and we stepped forth again on the road by which we had first approached the lost city. Only, instead of our faithful Pedro walking with us, his dead and embalmed body was borne sadly along.

Our parting with Nahum was brief, but sad We had all come to love the old gentleman, and he had grown fond of us, too, in his reserved way. He wrung us warmly by the hand and wished us all good fortune with equanimity, but when he came to say farewell to Nankivell I caught the suspicion of a tear in his eye.

"Farewell, my son," he said slowly, "for as a son I love you and it is my sorrow that you cannot actually be my son For your own good and for hers I have acted and when the first pain has passed, you will each bless me for my actions. And now, my brethren, may the blessings of——"

He essayed to give us the conventional blessing of Troyana but his voice broke and he turned hastily and retreated into the hull and the massive door crashed shut behind him.

"And that's that," remarked Willis, a little huskily, as we strode forward. His eye lighted suddenly. "Let's stop and take a look at the rocks that Zephaniah gave us," he said.

"All right," said Mariston, "Go ahead and look I'll keep my eyes open and be ready to make the peace signal. I don't want to stop an arrow after all we have been through."

I was no expert on gems, but Willis was After a careful examination, he announced that, at a conservative estimate, the diamonds that had been given us were worth half a million dollars for each of us.

"Not a bad haul," he commented.

"No, it's not," replied Mariston thoughtfully, "but now that it's too late, I wish that I had sided with Dune and Frank I'd give the whole business for an hour more with Balkis."

The dawn was just breaking as we started With fresh muscles and a good road under us we made excellent time, even with the handicap of our burden, and a little over two hours of steady hiking brought us to the point where we were to leave the road for the jungle. We rested for half an hour and then turned into the trail and headed for our canoe, which we planned on reaching by the night of the second day, thanks to the instructions for a better route which Hosea had given us.

The trail along which we went was fairly open but the heat began to get bad and the weight of our burden seemed to increase momentarily. For two hours we struggled on and then Willis, who was carrying one end, put it down and mopped his brow.

"Frank," he said, "I have given in to you on this matter so far, but we are coming to harder going every minute and I don't see how we are going to carry this body any farther unless we throw away our guns and packs and that would be suicidal I appreciate your feelings, but we have got Pedro back to the jungle, even if it isn't his native one, and I don't see why we can't bury him here just as well as any other place At any rate, I'm not going to carry him any farther."

MARISTON nodded assent and Nankivell turned to me. I looked sheepish, but the thought of struggling under that burden any longer broke my spirit and I nodded as well.

"Too bad," said Nankivell solemnly. "I had hoped to carry it farther, but I can't do it alone and since you fellows won't help me, I'll have to give in. If it goes any farther, it will have to go under its own power Help me to unwrap it."

"Why not bury it as it is?" I asked. "We have no means of making a coffin here."

"Oh, let's have another look at him," protested Nankivell, his knife busy on the bindings.

We cut the thongs and took off several layers of linen. Nankivell straightened up and looked at us.

"Fellows," he said, "do me one favor, will you? Step away a few paces and keep your backs turned while I finish this job. I'd rather do it without witnesses."

We humored him and stepped away for a few paces. We could hear him at work and presently his voice broke the stillness.

"All right, fellows, you can look now."

We turned and looked. For a moment we stood there smitten with amazement and then Nankivell's laugh broke the quiet. Before us was not the body of Pedro, cold in death, but instead, standing there smiling, was *Estha.*

Mariston was the first to speak.

"What the——? how the——?" he sputtered, "Frank, what the devil does this mean?"

"Oh, nothing much," said Nankivell airily. "I saw that you had the drop on me when it came to arguing, so I gave up and put the problem up to Estha. She felt just like I did about it, but we knew that we couldn't win you over, so we just decided to let you have your own way and make a private addition of our own to your plans and we did?"

"When was this planned?" asked Mariston.

"The day before yesterday. That was why I was so willing to fall in with your ideas when I came back from talking to Estha. Balkis helped us out on it and if there had been some way of bringing her along, too, we would have let you in on it, but there wasn't. Anyway, you hadn't even told Balkis that you wanted her to come."

"You know that you can never go back," Mariston said to Estha.

"I don't want to," she said. "I made up my mind to come with Frank, just as you made up your mind to leave Balkis. We'll see in a few years which one of us was the wisest."

"We'll have to change our plans," interrupted Willis. "We can't go on on this route for they know just how we are going. We'll have to hunt another trail."

"I don't think so," replied Nankivell. "In the first place, Estha is in bed sick in Troyana so far as Nahum knows and I think that Balkis can keep him fooled until we are on the river. There is no use in changing routes anyway. We have to go to the river eventually and if we took a longer path they would just cut us off at the canoe."

"There's some sense in that," remarked Willis. "Miss Estha, you know Nahum's disposition better than we do. Will there be any pursuit?"

"I can't tell," she answered. "I am his only descendant and he loves me greatly and if I were dragged back it would mean my death. One of the most immutable laws of Troyana is that of prescribing death for deserters. That is all that I can tell."

"I doubt greatly whether there will be any," said Mariston. "Even if Nahum urged it, I don't believe that Zephaniah would authorize any of the remaining few of the Cryptic Degree to leave the city. I am more afraid that Amos may find out that we have left the city and pursue us. Nahum's only chance would be to have Cowans sent after us."

"I don't think that there is much danger of either of those contingencies happening," I said. "Amos has too little cobalt to waste any of it in wildcat observation of the jungle and I don't think that he will ever see us. As far as calling the Indians is concerned, I am positive that Zephaniah would not allow the projectors to be used for that purpose for they take a tremendous amount of power and he has less than Amos has. There is another thing to remember; we have in no way violated our obligations and I never heard of a woman taking any. It seems to me that Zephaniah has no real grounds on which to base a pursuit."

"That's all true," mused Mariston. "I expect that the best thing for us to do is to keep on with our original plans. If Zephaniah wants to see us, no route that we can take will balk him for we have to move by the river in any case. We are safe from the swamps along this route, thanks to Hosea's map and there are Indians everywhere. Miss Estha, is that cloth impregnated with tin?"

"Certainly," she replied.

"Then the only suggestion that I would make is that Estha walk between Frank and me and that we each keep a portion of it around us like a robe. That may protect her from casual observation and at night we can rig a tent of it that she can sleep under. That's about all that we can do, except to make as good speed as possible and trust to luck to get out of it with whole skins."

In the formation which Mariston had suggested, we plunged ahead into the jungle.

CHAPTER XXI

Nankivell to the Rescue

THE route which Hosea had taught us was a vast improvement over the one by which we had approached Troyana. The ground was higher and more open and the terrible plague of insect life which had tormented us was, to a large extent, missing. Estha's costume was hardly such as an experienced traveller would choose for a jungle trip and, had we tried to retrace our steps over the old route, her sufferings would have been terrible. Even as it was, the mosquitos and the ticks were present in large enough numbers to make the journey unpleasant, to say the least.

We plodded on for nearly three hours before the increasing heat forced us to stop for rest. According to our pedometers, we had thus far traversed nearly thirteen miles from the spot where we had left Nahum. Mariston suggested that we make a tent of the tin-impregnated linen which we had brought from Troyana and I tried to do so, but when I had it constructed, it was evident that she could not stay in it. The thick, close weave of the cloth cut off every bit of air and made the tent like the inside of a baking oven. Even Bob admitted, after he had spent a few minutes in its shelter, that his idea was impractical. The next best thing that he could suggest was to rig some of it as a canopy over the head of the entire party and rest on the ground under it. Even this made it hot but we felt that we could stand it and that it might be of advantage as a partial shield against casual observation.

"Shall we set a watch?" asked Nankivell.

"Of course," replied Willis. "Remember that we are out in the jungle again."

"I believe that we ought to," agreed Mariston. "I'll take it, if you wish."

"No, draw straws for it," I said. "The loser keeps watch during the *siesta* and is relieved at night."

"Fair enough," said Willis. "Bob, get four blades of grass and we'll draw."

Of course, after suggesting such a method, I had to be the unlucky one and draw the short blade of grass. The others laughed and threw themselves at full length on the ground to rest and sleep a couple of hours while I shouldered my rifle and fell to walking. Tired as I was, I knew that I would drop off to sleep in a few moments if I didn't keep moving. Forward and back I paced, varying the monotony of my route by taking an occasional turn around the camp and fighting off fatigue and weariness as best I could.

The jungle was silent with the curious hush that often overtakes the tropical jungle at noon on a quiet day, when even the insects seem to feel the heat and lie quiet until the temperature falls. The sweat trickled down my face and dropped off the end of my nose and the point of my chin and I didn't have enough energy to wipe it off. The quiet became oppressive and I could feel my nerves drawing taut. There was absolutely not a sound that could have raised my suspicions, but I suddenly felt that unseen eyes were peering at me.

I whirled suddenly in my tracks hoping to surprise some lurking spy but not a movement of a leaf rewarded my effort. With a shrug of my shoulders, I turned my back and resumed my pacing but the feeling that I was being watched grew stronger and stronger. It occurred to me that it was possible that one or more Indians were lurking in the undergrowth and I laid down my rifle and made the sign of peace toward each point of the compass, but without result.

I shook myself and resolved to throw off such childish feelings and glanced at my watch. In an instant, the hair rose on the back of my neck and I knew where were the phantom eyes whose gaze I had felt. From the face of the watch, long iridescent streamers, visible even in mid-day, were leaping. I turned toward the sleepers and strove to raise my voice to call them but an unaccountable feeling of weakness and lassitude seemed to envelope me. I struggled against it and staggered forward, hoping to touch one of them, but my limbs seemed to be made of lead and I could barely drag them. My tongue was completely paralyzed. Nearer and nearer I struggled. It seemed for a moment that I would reach them, but a weight seemed to be pressing on my shoulders and I staggered and then wilted slowly to the ground. I made a last effort and rolled toward them, at the same time exerting all of my will power in an attempt to cry out.

"Bob!"

I don't know whether my lips actually formed the word that my mind shouted, for just as I was about to utter it, a wave of darkness swept over me and blotted out all the scene before me. I was falling, falling, falling——

I came to myself with a start. My first impression was that I had fallen asleep on guard but a moment of concentrated effort enabled me to recall what had happened. I jumped to my feet with a start and the cry that I had started burst from my lips in a shriek.

"Bob!"

Mariston raised his head with a grunt but Willis sprang to his feet like a startled deer, his pistol in his hand by the time he had risen.

"What is it?" he demanded, looking around.

"I don't know," I stammered. "I must have been dreaming. Is everything all right?"

"Why, yes," he answered looking down. "No, by thunder, it isn't. Frank! Bob! Turn out! The girl's gone!"

"Gone?" I gasped stupidly. The fumes of that strange sleep seemed to still clog my brain.

For answer he pointed at the place where Estha had lain. It was empty, although the impress of her body still showed faintly on the vegetation. By this time Nankivell and Mariston were on their feet.

"Where's Estha?" were Nankivell's first words.

"Gone," I mumbled.

"Gone? Where did she go and when?" he demanded.

"I don't know," I replied feebly. "She was there all right a few minutes ago, but when I woke up she was gone."

"When you woke up?" asked Mariston.

"Yes," I returned. "I dropped off to sleep and when I woke up she was gone."

WITH an inarticulate cry of rage Nankivell sprang at me, his face working convulsively and in his eyes the light of murder. Willis caught him as he leaped and in the face of his strength Nankivell's struggles were as those of a child.

"Steady, youngster" admonished Willis. "Keep your shirt on."

"The damned traitor went to sleep and let her be stolen," gasped Nankivell as he made another attempt to get at me.

"Take it easy, boy," counseled Willis. "You aren't going to make matters any better by acting like a kid. Sit quiet and let's hear about it."

Nankivell struggled for a moment longer but he was helpless in Willis' grasp and gradually his rage subsided and he ceased struggling. Willis quietly sat him on the ground but kept a sharp eye on him.

"How did it happen, Dunc?" he asked.

I collected my scattered wits and told him as clearly as I could. When I came to the matter of the watch he drew in his breath with a sharp hiss but he did not interrupt me until I had finished. Nankivell had watched me with an angry glare in his eyes as I started my tale but as the story progressed the anger faded from his eyes and when I had finished he rose and held out his hand.

"I beg your pardon, Dunc," he said simply.

I shook his hand in silence. It was the first word of anger that I had ever received from Frank Nankivell, but the handsome way in which he atoned for his outburst made me forgive him without rancor.

"So, old Nahum got her back," mused Willis.

"Nahum or Amos," answered Mariston.

"By thunder, that's right!" exclaimed Willis. "It might have been either bunch. Both of them have observation posts and projectors at their service. What happened to you, Dunc?"

"Rays of some sort," I answered. "They affected my watch and that is proof to me that they came from Troyana projectors. Just what they were, I don't know. I got the Cryptic Degree so hurriedly that I couldn't digest most of it."

"What difference does it make?" cried Nankivell. "We've got to go after her at once."

"How long has it been since you were knocked out, Dunc?" asked Willis.

I glanced at my watch and gave a cry of surprise. It had been just a few minutes after eleven when I had

seen the rays playing on it and when I looked again it was half past five.

"Over six hours' start," said Willis when I told him. "They had plenty of time to get back on the road or even into the city itself. I am afraid that a chase would be hopeless unless we were willing to follow her back into the city or even into the sanctuary itself."

"I'll follow her to hell!" replied Nankivell.

"There or heaven is where you'll probably wind up if you try to follow her," answered Willis quietly. "It will be pitch dark in another hour and a half and we couldn't hope to make the road by that time. We will have to wait here for the night and that gives them another twelve hours of start which would assure their return to the city before we left this spot. I'm afraid that it's hopeless."

Mariston slowly nodded assent. Nankivell looked from one to the other and then at me. The force of Willis' arguments was too much for me and I silently shook my head.

"So none of you have the guts to go back with me," he cried. "All right, I'll do better without a bunch of quitters with me anyway."

He seized his rifle and pack from the ground and started toward the trail. He cast a scornful glance around and saw that Mariston was calmly adjusting his pack.

"What are you doing?" he demanded.

"Oh, don't be such a fool, Frank," replied Mariston in a weary voice. "If you are going back, I'm going with you, of course."

Nankivell hesitated and I moved slowly over and started to sling my pack. He looked at me questioningly.

"Of course Bob's going," I said as I picked up my rifle. "In point of fact, we're all going. I don't think that there is one chance in a million that any of us will ever live to see Troyana, let alone the sanctuary, but we'll try it."

"Yes," chimed in Willis as he struggled with his pack straps, "It's the craziest stunt that I ever heard of, but if that fool youngster just naturally insists on getting himself killed, I might as well keep him company."

Nankivell's face grew as red as fire.

"I beg your pardon, fellows," he stammered. "You are real pals, all right, but you mustn't go."

"Why not?" demanded Mariston.

"Why, it's just as Dunc says. I haven't one chance in a million to ever win through and you mustn't throw away your lives on a wild-goose chase like that. Besides, you fellows have nothing to gain and everything to lose and I'm just the other way around."

"Oh, shut up and quit arguing," said Mariston rudely. "If you go, we go, and that's all there is to it. We're just wasting time. Before we start, however, we ought to decide where we are going."

"Why to Troyana, of course," exclaimed Nankivell.

"What particular part?"

Nankivell paused.

"Wherever Estha is," he replied after a moment of thought.

"Agreed, but where shall we try first, the sanctuary or the city? If we go to the sanctuary after the road is closed to us, it means sudden and painful death, even allowing that we can get there, or I miss my guess. If we go to the city, it means slower but considerably more painful death. In neither case will we probably see Estha, even if we chose the right place to look for her. It's your funeral, Frank, take your choice."

"We can decide that as we go," replied Nankivell.

"There is another point that may not have occurred to you," said Willis. "It's just possible that we would be going straight away from her."

"What do you mean?"

"It is more than possible that Nahum, if he is the party responsible for her absence, has communicated with the Warder of the Outer Ways and the Indian guards have captured her and have her here in the jungle where she will be kept until we are disposed of."

Nankivell's face blanched.

"Do you think that possible?" he asked.

"More than possible," said Mariston. "I hadn't thought of it before, but now that Willis has mentioned it, it seems quite probable. He would know that you would hotfoot it back and he might very easily have done that very thing."

"What do you think is the best thing to do?"

"It's too late to do much of anything tonight," said Willis. "It is getting too dark to trail right now and in another hour it will be entirely dark. If we are going, the best thing to do is to wait for daylight and see if we can't pick up a trail. If we can, all right. If we can't, we can hit for Troyana and go it blind."

Nankivell grudgingly assented to Willis' program and we made camp for the night while the light still lasted. Before we had our netting up darkness had fallen and the booming of mosquitos prophesied torment for the unlucky men who had to mount guard.

THE long sleep we had had in the afternoon had rested us and we sat up and discussed plans until nearly midnight. Gradually the conversation lagged and presently a gentle snore from Willis proclaimed his departure into the land of dreams.

"I'm not sleepy, Bob," said Nankivell. "I am so worried that I wouldn't sleep anyway. I'll take the first watch and when I get tired, I'll call you or Ray."

Mariston sleepily grunted an assent and Nankivell took his rifle and slipped out from under the covering. For a while I watched him pace his beat, dimly outlined in the brilliant moonlight that filtered down through the leaves, and than I joined Mariston in sleep.

I woke to find it broad daylight and Mariston shaking me by the shoulder.

"Look here, Dunc," he said handing me a sheet of paper. I stared dumbly at it for a moment and then recognized it as a sheet torn from a notebook which I had seen in Nankivell's possession. I turned it over and saw that both sides were covered with tiny writing done in pencil.

"1:30 A.M." it read, "Dear fellows: I have been thinking it over and I know that I have no right to let you go with me, especially after what I have seen tonight. While I was on guard, I heard the drums again. I knew that it meant death for the one who heard them, so I didn't wake you, but kept a close watch. The drumming grew louder and louder and I thought that my head would burst and then I saw her. I tell you, I saw her, as though she were standing before me. Her arms were bound and she stood before the altar of the Golden Calf with a dozen Burden Bearers around her. I knew then where she was. She didn't know that I could see or hear her. The brutes were threatening her in Atlantean and she looked at them proudly and shook her head and said something. One of them struck her with a sort of whip that he held and she cried 'Frank.' That settled

it for me. I am going to her, although I know that I am watched and haven't a dog's chance to win through, but I'll die trying to reach her anyway. I didn't wake you because I know that you would insist on going along and I don't want you to. I took all of the ammunition except twenty rounds for each of you because I may need it. I have left my share of Zephaniah's diamonds in payment. Divide them equally between you. Please don't try to follow me, fellows, I will have four or five hours start and you can't catch me. By the time you could leave the camp, I will be in Troyana—or dead. Good-bye, fellows, and thanks for the help you would give me if I woke you. Frank."

I read the message twice before I spoke.

"What are we going to do?" I asked.

"What can we do?" asked Mariston sadly. "Frank is right. He is either in Troyana or heaven by now. If I thought that there was one chance in a million of winning through and helping him, I'd go after him, but he has been clever enough to stop us entirely."

"How so?" I asked.

"He took nearly all the ammunition," replied Mariston. "It would be folly to try to storm Troyana with three hundred and fifty rounds; it would be suicidal to try it with fifty-three, and that is all he has left us. He has taken my automatic, too. No, Dunc, he evidently meant it when he said that we were not to follow him. I hate as badly as you do to desert him but it can't be helped."

I heard footsteps and looked up. Willis was approaching from the direction of Troyana.

"I followed his trail for about half a mile and then lost it on hard ground," he reported. "His tracks are at least five hours old and he headed straight for the road. I'm afraid that there isn't a bit of use in trying to overtake him."

It seemed like the basest kind of treachery to desert him but there was nothing else to do. Without ammunition and short one pistol, it would indeed have been suicidal to try to storm the halls of Troyana, especially when we had abundant reason to know that our every movement was watched and that our enemies would be awaiting us. If we had had the least idea that he was even alive, I think that we would have gone after him, but the odds were so great that he was dead, that we finally gave up discussing it and turned our faces sadly toward home again.

CHAPTER XXII

The Warder of the Outer Ways

ALL day we doggedly made our way onward. The plague of insect life was not as bad as it had been on the outward trip, but the ticks and mosquitos were numerous enough to make it very unpleasant for us. Toward evening the ground began to fall rapidly and the jungle to get thicker, sure proof to Willis that we were approaching the river. We came to a stream that led in the general direction that we were going and we essayed to follow it, but the multitudes of leeches which fastened on us soon forced us to take to the jungle again and work our way through the *lianas* and other creeping plants.

By nightfall we had covered a good distance, and as nearly as we could judge from Hosea's map, we were within six miles of the place where we had left our canoe. The last two miles had been through mud that was ankle deep and the prospect of spending the night half sunk in the ooze and slime underfoot was not one that induced us to linger.

"How about it, Ray?" asked Mariston, "shall we try to keep on going in the hope of reaching the canoe tonight?"

Willis studied the ground before replying.

"I don't think so," he answered. "In the first place, as soon as the sun sets, it will get as dark as the inside of a cow here and I doubt whether we could keep our direction close enough to make any speed, even with the aid of the luminous compass. We would probably wander around and not make over two miles forward during the entire night. I hate to sleep in this muck as badly as you do, but I think that it's the only thing to do."

Accordingly we set our watches and Mariston and Willis stretched themselves in the mire after a meager supper and left me on guard. I found it almost impossible to keep awake. The steady marching of the day, coupled with the stirring events we had gone through, had exhausted me both mentally and physically and I was soon sure that the watch which I was keeping was so lax as to be practically worthless. My tour finally ended and I hesitated whether or not to call Willis, who had the middle watch. I realized that he was as tired as I was and I finally lay down beside him without calling him. I felt that if we were doomed to be surprised that night, that such a watch as any one of us could manage to keep, would not prevent it.

The false dawn had died and the short period of intense darkness that heralds the true dawn was at its densest when I awoke with a start. I sat bolt upright listening intently, but no matter how I strained my ears there was no sound that would account for my sudden start into complete wakefulness. A glance at the face of my watch showed me that it was behaving normally, although it still gave out an abnormally brilliant glow from the excitation which it had recently received. There were, however, none of the long tell-tale streamers coming from the dial and I shrugged my shoulders and thought that I must have been dreaming. I listened again for a short time, but gave it up and lay down again to sleep.

Hardly had I reached a prone position than I sat bolt upright again with another start. Faint and far-distant and almost imperceptible it was, but none the less I knew it. It was the fatal drums of Tapajos. It was so faint that I thought for a moment that I must be dreaming and I tried plugging up my ears with my fingers. This test resolved the last of my uncertainty, for it intensified the drumming. With a groan I reached over and grasped Willis by the shoulder to shake him.

At my touch he sprang to his feet in that state of complete wakefulness that characterizes animals and marks men who have spent their years in danger of their lives.

"What is it?" he asked in an undertone as he surveyed the country as best he could in the darkness, his drawn pistol in his hand.

"Shhhh!" I whispered, "Listen."

He bent his head and listened. The drumming had momentarily ceased and he held his strained attitude. While he was listening I shook Mariston and he sat up quickly, but much more slowly than the cat-like bound which had characterized Willis' awakening.

The three of us stood with straining ears, listening for

any sound from the jungle. The usual nocturnal noises of the jungle were silent for the most part and only a faint hum of insect life was audible. Willis' hearing was keener than mine and he caught the sound of the drumming before either Mariston or I did, when it started again.

"The drums!" he muttered hoarsely. "What the devil is it, Dunc? Are those devils after us again?"

"Hush!" exclaimed Mariston. "See if it is getting louder. It may not be meant for us."

We listened intently and for a moment I hoped that Mariston's words might have some foundation in fact, for the sound got no louder and, indeed, seemed to be dying out. Fainter and fainter it got until we could hardly distinguish it again and then, for a moment, it ceased. As it stopped, a faint whisper of sound came to us from miles away. It was faint and almost indistinguishable among the other faint noises of the night, but it was enough to blanch our faces with terror. It was the distant long-drawn-out hunting cry of the *Guardian*.

As it died away in the distance, so far away in fact that the bubbling grunt which ordinarily ended it was totally inaudible, the drums started again and this time they were unquestionably louder.

While we had been listening, the dawn had started and we could dimly see one another's outlines. I looked at the others and met questioning glances from them.

"Listen!" said Mariston.

Still faint and far-distant it was, but appreciably nearer than it had been the first time. There was no doubt that it was the cry of the *Guardian*, for the entire call was audible to our sharpened senses.

"Damn it!" exploded Willis. "Why in thunder didn't Frank leave us more ammunition?"

"Never mind Frank," I replied, "the question is not what Frank left, but what are we to do?"

"Nothing that I know of," said Mariston with a mirthless laugh. "There aren't any trees here that we can climb, as there were a few miles back, and we know enough of that creature to realize how futile a Springfield bullet is going to be. Of course we can scatter and may be one will get through, but since the brutes hunt in packs of three I don't think that will do much good."

THE drumming was more distinct now. From time to time it would die out until it was almost inaudible and then would come that horrible blood-curdling shriek, each time nearer than the time before.

"It won't be long now," said Mariston with a sickly grin in what was evidently an imitation of Nankivell's usual tone.

"Let's scatter," exclaimed Willis. "It's a slim chance, I'll admit, but I think it's our only one."

We were about to obey his suggestion when a sudden thought struck me.

"Wait a minute," I cried. "Bob, didn't Nahum tell us that these brutes always traveled in packs with some of the Cowans along with them?"

"Yes, he did," said Mariston as he paused.

"Stick together then," I said. "Fellows, it's not hopeless yet. We have the sign to give to the Cowans to protect ourselves. If they approach within seeing distance before these things get us, we may have a chance yet."

"Right, Dunc," cried Mariston. "Spread out a little and make the sign as soon as those howls get close."

"What about the drumming?" asked Willis.

"I don't know," he replied. "We've got to take some kind of a chance and I believe that Dunc is right and that we have a better chance this way than any other."

Nearer and nearer came the howls of the approaching *Guardian* until it was evident that the pack was not more than a few hundred yards away in the jungle. As had happened in our previous encounter with them the cries suddenly ceased, only to be repeated in a moment from behind us and then from one side. The beasts were circling us only a short distance away and yet, despite the size and apparent unwieldiness of their bodies as we had seen them in Nahum's instruments, not a trace of the sound of their passage through the jungle could we hear. We waited for their nearer approach.

The drumming, which had grown more and more insistent, rose to a crescendo and then came the hateful *whish* of an arrow. I must have caught a glimpse of it as it appreached, for without conscious volition I suddenly threw the butt of my gun up before my face. Well indeed was it for me that I did so for there was a slight jar on the gun and the thud of the arrow hitting the wood was plainly to be heard.

"The sign!" I gasped; "that arrow was meant to hit."

Mariston and Willis dropped their guns and put themselves in the proper position and gave the sign. Instantly a weird call sounded in the jungle and the voice of the *Guardian* was suddenly silent. The call was repeated and I could make out the fact that it was syllabated but the language was one that I did not know. None of us replied but I recovered my wits enough to drop my gun and join the others in making the sign.

Again the weird call came insistently from the jungle.

"What are we supposed to do?" asked Mariston.

"Darned if I know," I answered. "Stand still. That is the safest thing that I can think of."

"I almost caught the words of that cry last time," said Willis. "I wish the fool would repeat it."

His wish was not long of fulfillment for again the cry arose. Willis grunted in satisfaction and, pitching his voice on a peculiar low wailing note, he emitted a series of syllables which meant nothing to me. Apparently they meant more to the rest of the auditors for the cry came again from the jungle, this time comparatively close.

"Talk to them, Ray, that's a good chap," said Mariston nervously. "Tell them that you're Santa Claus or something like that."

"Shut up!" ejaculated Willis as he replied again to the voice from the jungle.

For some time the colloquy went on and then Willis turned to us.

"They are not satisfied," he said. "The sign is right and they don't dare to attack, but he claims that, if we were from Troyana as we say, that the drumming would stop, or indeed, would never have started."

"It must be Amos who is drumming," I exclaimed "Tell him who we are and the condition in Troyana."

"Don't do it," interrupted Mariston. "If they know that the power of the Master is broken, or at least checked, there is no telling what they will do."

"What is the name of the Warder of the Outer Ways?" I asked suddenly.

"Gedaliah," answered Mariston after a moment's thought.

"Ray," I said, "tell them to send for Gedaliah. Inform them that, as wearers of the crimson, we order his immediate presence here."

"Good stuff," he answered and gave the message to the Cowan.

The Indian replied and for several minutes the talk went back and forth, Willis momentarily growing more emphatic in his speech.

"Good," he said at length. "My knowledge of the names of the officers seemed to impress him. He says that Gedaliah is a long way off but that he would deliver our message to him. Meanwhile, we are to remain here without stirring, as any attempt to move will result in a shower of arrows and an attack from the *Guardian of the Jungle.*"

"Fair enough," said Mariston. "Now there's nothing to do but wait. Let's make ourselves comfortable."

The morning passed away in silence. For some time the drums kept up their throbbing but presently they died away and quiet reigned. The sun rose higher and I began to yawn. Willis was already snoring and Mariston was nearly asleep. Knowing that we were surrounded by enemies who could easily kill us without our catching a glimpse of them, we had seen no object in keeping a watch. Indeed, as Mariston pointed out, setting a watch would tend to make our attackers think that we were uncertain of our standing. I was about to stretch myself out in the mud and take a nap when an interruption came.

I HAD been drowsing, but not asleep, and it seemed impossible that anyone could have approached me from the rear without alarming me; but someone did, for a voice spoke almost in my ear.

I jumped to my feet, rubbing my eyes in amazement, and confronted a stately grey-haired man. It did not need the blue-bordered robe girded up over the leather shod legs to tell me that one of the Planners of Troyana stood before me. One glance at his hawklike visage told me who he was.

"Fraternal greetings, Brother Gedaliah," I said stretching forth my hand. Willis and Mariston struggled to their feet as our hands met. Gedaliah looked at me with cold suspicion in his eyes, but as I applied the telltale pressure, the suspicion faded and was replaced by a look of astonishment.

"Whence came you?" he asked.

I glanced around at the jungle. His glance followed mine and a look of understanding came into his eyes. He faced the jungle and gave some commands in the same peculiar wail which Willis had used in addressing the Indians.

"Now we can safely speak," he said with a smile.

A few minutes of challenging assured him of my knowledge and he began to question us. The word of the revolt of the Bearers of Burdens had not as yet reached him and he was smitten dumb for a few minutes when I had finished outlining the state of affairs in Troyana to him. Naturally, I said nothing of Estha or of Nankivell.

"I thought it strange that I had received no orders or communications from the Master for so long," he said at length, stroking his beard. "This, then, accounts for the silence. But what do you here? Why are you not taking part in the defense?"

I explained to him the reasons which had impelled the Master to send us from the city and he bowed.

"His orders shall be obeyed," he said. "My brethren, the stream which you seek is but five miles from here. Your property has been moved from the place where you left it, but it shall be returned at once. Your canoe, of course, has been devoured by termites but I shall give you guides and warriors who will quickly construct you a new one and who will paddle you down to the Tapajos. There you will release them and send back by them this token, that it may be known that they have done what was ordered. I regret that I cannot go with you to give you my personal aid."

"Where are you going?" I asked.

"Where could I go but to the rescue of the Master and my brethren?" he asked. "I will summon all of the Cowan guards and the packs of the *Guardians* from all sides and march at once to their rescue."

"Good for you!" exclaimed Mariston. "Would we be of any help? We would be glad to accompany you."

"I appreciate your offer and the Master shall be informed of it, if I ever see him," replied Gedaliah with a bow. "It is what I should expect from loyal brethren. Did not the Master, however, say that the way was forever closed to you?"

"He did," I admitted.

"Then again I say, his orders shall be obeyed," replied the Warder. "And now may the blessings of the Great Architect rest on you and on all of our brethren and may peace and happiness ever be yours. Go on your way and fear nothing. The guides will precede you and serve you. Leave your impedimenta. It will be carried by your servants."

He spoke words of direction to the forest and a half dozen Indians came forward and shouldered our goods without speech and trotted away into the jungle. We watched them go and then turned to speak our thanks to our new-found friend, but he had disappeared.

"Well, I'll be darned," exclaimed Willis. "I thought that I could move quietly but he beats any Indian that I ever saw. Well, anyway we don't have to carry all that junk. Let's move."

With lighter hearts than we had since our awakening, we took up our march.

CHAPTER XXIII

The Call

WHEN we reached the bank of the river we found all of our goods intact and the Indians busily engaged in making a new canoe for us. When it was finished, the skilled paddlers, who knew the stream like a book, whisked us down to the *Rio Tapajos* in short order. We dismissed them there and took the paddles ourselves and, although the paddling stiffened us up a little, we had the advantage of having the current with us and we made good speed. We passed Bacabal without stopping and arrived in good time at Itaituba where our friend, *Dom Esteban,* welcomed us as men returned from the dead.

"Where is Pedro?" was almost his first question.

Mariston told him something of the manner of Pedro's death and the *Dom* stroked his beard reflectively.

"He was a good and faithful servant," he said, "and doubtless his death was such as he would have chosen. I will have many masses said for the repose of his soul."

The *Dom's* kind offices sped us on our way to Belem and it was only by requesting it of him as a favor, that we could get him to retain one of the smallest of the diamonds with which Zephaniah had presented us. There

was nothing worth noting in our trip to Belem nor in the trip to New York which followed. I radioed Molly that I was coming and it was a very excited young woman who met me at the dock and dragged me away to "tell her all about it," while Mariston and Willis took our diamonds to Tiffany's for appraisal and safe-keeping.

Tiffany's experts warned us against flooding the market, but they agreed to take them on consignment and put them slowly into circulation for us. While they would not venture to give exact figures, they stated that Willis' appraisal was entirely too low and that the stones, excluding a few of the finest which we kept, would net us nearly a million each. One of the finest I had set in platinum for Molly and requested both of my friends to be present at the wedding, which would take place in ten days.

Mariston accepted the invitation gladly, but Willis refused. He said that it had been his life-long ambition to buck the tiger at Monte Carlo and that was where he was going on the next boat. He left in fine feather with a hundred thousand good American dollars to his credit. The day before the wedding, Mariston received a collect cable from him in which he asked for the price of a ticket home. Molly and I discussed the advisability of delaying the wedding until he arrived, but Mariston would not hear of it.

"I know Ray Willis," he said, "and he is just as likely to go to Pekin as to return to New York. I want to get to work myself and I never will while I have you two children on my hands. Go ahead and get married and leave me in peace."

We followed his advice and did so. We both tried to insist that he make his home with us, for a time at least, but he would not hear of it.

"I can't do it, Dunc," he said. "I like you both, but I would be in the way. You remember what Zephaniah told us to do? I don't know how you are planning to carry out his orders but I am going to Central America and start a model fruit plantation where work shall be done efficiently and where the natives shall get humane treatment. I have knocked around there a good deal and I know that something of the sort is needed and I think that I may be able to do some good there and I could do nothing here that others can't do a lot better."

"I am going to endow a private research laboratory," I told him, "and try to develop into a usable form some of the knowledge that I picked up in Troyana. I think that I can do more good in that way than in any other."

"I agree with you," he said. "If your pile isn't enough to carry out your ideas, mine is always at your call. Meanwhile you and Molly can keep a room for me and I'll stay with you when I am in New York. You can let Ray stay there for a while when he comes back—if he ever does. Now I'll leave you, for I am sailing tomorrow."

It was a good thing that Molly and I did not wait for Willis' return to get married, for Mariston had spoken wisely. He didn't go to Pekin, but he did go to Alexandria and get mixed up in some excavation work that brought him foul of the Egyptian Government and I had to wire him ninety thousand dollars less than two years later to get him out of the scrape. I told him that there was a fortune waiting for him in New York and he cabled back that he was coming after it, and this time he came. I lost no time in getting in touch with Mariston and a month later we three sat in my laboratory talking over old times and wishing Nankivell was with us.

"Poor old Frank," said Willis, "I am sorry that he had to go and make such an ass of himself just when we had the world by the tail. I wonder what ever became of him."

"He was probably killed within an hour after he left us," I replied.

"I don't think so, Dunc," said Mariston with sudden vigor. "I believe that he won through."

"What makes you think so?" I asked.

"I have felt for months that he was alive and trying to communicate with me," he answered. "I can't tell why I feel it, but in my bones I do."

"Have you seen or heard anything that makes you think so?" asked Willis, looking at him keenly.

"Nothing definite, no. Why do you ask?"

"Because I have had the same feeling," said Willis. "I have felt that something was just outside my consciousness trying to get inside. Once in particular, when I had some trouble with a bunch of *fellaheen,* who were working for me, and one of them drugged me with *hasheesh.* I felt then that I was on the borderland and I would have sworn that I heard his voice. I put it down to a dream, but since you say what you do I am not so sure."

"That is strange," replied Mariston. "Twice I have seen him in a dream. Each time he was attired in the crimson robes of the Cryptic Degree and he tried to get a message across to me, but he couldn't do it. What do you make of it, Dunc? Have you had any such indications?"

BEFORE replying to his question, I went to my safe and brought out a file of laboratory records.

"I had not intended to mention this for I put it down to an over-active imagination on the part of one of my assistants," I said, "but in view of what you have both felt, perhaps I was wrong. About a year ago—by George, exactly a year ago today," I went on as I glanced at the date of the report in my hand, "one of my assistants told me that he had received a broadcast on an extremely low wave length from an unknown station. He could not make out the words, but it was something about a mare, a goat and a cobra. I tried to verify his report but I could not locate the station."

Mariston looked at the report.

"Mare, goat, cobra," he mused. "I can't see where anything of that sort connects up with Frank."

"It is rather far-fetched," I admitted, but I wondered if it were possible that getting only a few words as he did that he might have only received a portion of the ones he did get. 'Mare' might be part of 'Mariston,' and 'cobra' might have been 'cobalt' but I can't connect the goat."

"That doesn't seem very probable," said Mariston. "Your receipt of a message by means of instruments doesn't check up with our reception very well."

"If it were any place other than Troyana in question, I would lay the thing in the case of Ray to *hasheesh,* which he admits he had, and in your case to morbid imaginings," I said. "However, we all know that Troyana has means of communication that are different from anything we knew of, and they may be developing some form of telepathy, which accounts for it. All of this would tend to make me think strongly that Frank is alive. I don't believe in spiritualism."

"Neither do I," said Willis, "although I have seen some mighty funny things that I could tell you about,

both in India and in Egypt. Have you ever heard from your mystery station again?"

"No, I haven't," I replied. "I was trying at that time, in fact I am still trying, to perfect something along the line of the observation instruments that they had in Troyana. I have made absolutely no progress along the line of vision, but I have developed a radio receiver that picks up some of the lower harmonics of radio waves. It was with the first of these that my assistant heard, or thought he heard, that message. I have made better and more powerful instruments since, but I haven't received a word."

"That's a mighty interesting start," said Mariston. "Would you mind letting us see them?"

"Not at all," I replied as I led the way into the sound section of my laboratory and pointed out the apparatus.

Mariston turned on the current and revolved one of the dials.

"You're way off," I laughed. "You are on a much shorter wave length than any station sends on. Let me tune it."

Mariston shook his head and looked again at the year-old report that he held in his hand.

"I am interested in that mystery station," he said. "We ought to hear from it tonight, if ever."

"Why so?" I asked.

"Because it is just a year since you last heard," he answered. "Did you ever try to connect up the date with anything that happened on our trip?"

I thought for a moment and an idea flashed across my mind. I went to my desk and got out the diary that I had kept during our trip.

"You're right," I said as I verified the date. "It is exactly two years to a day since Nankivell left us and tried to make his way back."

"Exactly," he replied. "Energy is scarce in Troyana and he would have to conserve it. It is natural that he would pick out this as the date for making an attempt for he would be sure that he would be more in our minds on that day than any other."

Greatly excited, I turned to the receiver.

"Is that the instrument on which you heard him before?" asked Willis.

"No, this is an improved model," I answered.

"Possibly you had better get the old one out," he suggested. "I am no scientist, but it strikes me that there might be something about that old instrument that made it especially good for the purpose."

I assented and leaving Mariston to play with the new instrument, I went into the storeroom and dug out the older receiver. It was a matter of ten minutes work to get it connected up with batteries and fitted with tubes. I consulted the old report and set the dials and clamped on a headset. As I expected, there was no result.

"Let me take it," suggested Mariston.

I nodded and he approached to take the dial. As he did so, I paused in the act of taking off the headphones. There were words, or at least a murmur of words, issuing from them.

I replaced the headset on my head but the voice stopped. I cautiously lifted them again with no result.

"What is it, Dunc?" asked Mariston, his voice quivering with excitement.

"I don't know," I replied. "I thought for a moment that I had something but it must have been imagination."

I surrendered my place to him and he began with infinite patience to turn the dials. Again and again he ran over the gamut of the low wavelengths to the limit of the receiver without result. At last he gave up and turned away, giving the dial an idle twist as he did so. Instantly his face froze in an expression of amazement.

"My God, Dunc!" he exclaimed in a whisper, "listen to this."

I took the phones from him and adjusted them but could hear nothing and said so. He took them back and admitted that he could hear nothing himself. I looked around and my attention was drawn by a restless movement on the part of Willis.

"I have it," I exclaimed. "The position of our bodies must have been such as to give exactly the right capacity to the receiver to get that station through. Move up to where you were Ray, and Bob, you try to get in the same position."

For half an hour we squirmed around trying to reestablish the broken circuit. Suddenly Mariston held up his hand.

"I'm getting it, fellows," he whispered, "keep steady as you were."

He listened again and an expression of positive awe overspread his face.

"What is it, Bob?" I whispered.

"Quiet," he replied, "it's Nankivell."

Willis and I involuntarily jumped forward.

"Now it's gone," he said. "Get back in position exactly as you were."

Five minutes more of squirming and he announced that he had it. He listened with rapt attention for some time and then motioned me to take his place.

I did so and the process of establishing a balance had to be done all over again and again until the right position was attained.

"I couldn't get any words except 'Nankivell' and that very indistinctly," he said.

He moved in his chair as he spoke and I heard an indistinct murmur. I motioned him to hold his position and began to move my hand about trying to bring it in clearer.

Presently I made out a few words.

"Mariston, Bob Mariston," I heard faintly and dimly as though it were a voice from another world. There was a pause and the voice spoke again. "Dunc, oh Dunc. Ray Willis. This is . . ." The voice faded and I had a good deal of trouble to bring it in again. At last I heard a murmur and by dint of careful hand movements I brought it once more to audibility.

"Willis," I heard, "This is Frank Nankivell. I am—safe—but need—Troyana——" The voice faded again.

"Let me take it," begged Willis when I reported what I had heard.

"Dunc knows more about it, let him keep it," said Mariston. "Try again, Dunc, this may be life or death to him."

For some time I could not get even a murmur but patience was rewarded at last and I caught a few more words.

"Need cobalt," I heard. "We need all the cobalt you can carry. The passage that we came out is——"

"Damn!" I exploded as the voice faded out again. Another period of careful shifting of bodies followed and the voice came in again.

"Mariston," it went on. "Dunc, this—safe in Troyana. We are well—need cobalt. Bring all you can carry. The Master gives per——"

THERE was a crash in my ears followed by a squeal from the instrument. I investigated and found that a radiotron was burned out. I hurriedly replaced it, but two hours of careful manipulation would not restore the delicate balance we had lost and we gave up at length.

"What do you make of it, Bob?" asked Willis when we had given up and were again seated in the laboratory office.

"If it were anyone but Dunc, I would call it a trick," he replied.

"It's no trick," I stormed.

"Keep your shirt on," he laughed. "I can always get a rise out of you. I know that it wasn't a trick, Dunc. Taken with what I have experienced and what Ray has seen, it leads me inevitably to one conclusion. Frank is alive. He won through to Troyana despite the odds against him and is beleaguered there and he needs cobalt What is cobalt, Dunc? Can you get it in New York?"

"Very easily," I replied, "it isn't especially rare."

"Is it bulky like feathers or is it heavy like iron?" he asked.

"It's a metal," I replied, "about like iron."

"Hum," he said thoughtfully. "How much apiece do you think we could pack, Ray?"

"On Hosea's road, I would say twenty-five pounds each, or even thirty pounds at a pinch," he answered.

"Carry?" I asked excitedly. "Are we going back to Troyana?"

Mariston and Willis exchanged glances.

"No, Dunc," said Mariston, "*we* aren't, but Willis and I are."

"If you go, I go," I replied.

"No you don't," he answered.

I started to protest, but Willis silenced me.

"Now listen to reason, Dunc," he said. "In the first place you are married and Molly wouldn't let you go, while Bob and I are footloose and go as we please with no one to miss us except yourself. In the second place, we can't hope to storm Troyana by force. We'll have to sneak in and two are better than three at sneaking. I'd go alone, but I am willing to risk Bob for the sake of the additional weight that he can carry but I wouldn't take a chance on you. Bob is an old woodsman and you aren't. In the third place, Bob and I have done nothing much for the world and you are doing a lot. The world would miss you and it wouldn't miss us. In the fourth place, Bob is crazy to get back there to see Balkis again and I don't mind admitting that the place has attractions for me, too. In the fifth and last place, Bob and I won't let you go."

My arguments did not move them, nor did I persist very hard in arguing after one look at Molly's face when she heard that I was thinking of going. After all, it *was* a single man's adventure.

While they assembled their equipment, I spent hours in the laboratory trying to get another message but not a sound could I hear. I purchased the cobalt for them, fifteen pounds in blocks and an equal amount in sheets, rods, and powder. I did not know in what form Frank wanted it, so I made up packages containing thirty pounds for each of them, assorting the material so that each of them would carry each form. The night before they sailed for Belem we held a final consultation.

"I wish that we had got that message just a little clearer," remarked Mariston as he conned for the hundredth time the words that I had written down. "Some things are clear enough. For instance, we know that he is safe in Troyana and safety for him means the sanctuary, so that is our goal. It is also clear that we are bringing to him his principal need, cobalt. We know, or at least are sure, that the Master has given us permission to return, but I surely wish that we knew the meaning of that phrase about the way we came out. Is it blocked or open?"

"It's fifty-fifty," replied Willis. "I say, take it. It *was* open and it's the only way that we know, except through the city and I'll bet my life that it isn't open."

"That's exactly what you are betting," said Mariston grimly, "your life, and mine to boot. However, I agree with you and we'll plan to take that route and then be guided by circumstances."

Molly and I bade them a sad farewell the next day as the *Amaris* pulled out from her dock and headed down the harbor. Three months later I received a letter from *Dom Esteban* enclosing one from Mariston.

Mariston told us that he and Willis had arrived at Bacabal without trouble and were leaving for the interior the next day, taking three Indians with them as paddlers. They had received no other word and were as much in the dark as ever. *Dom Esteban* described their departure to us, for he had accompanied them from Itaituba to Bacabal to see them off. He told us that the men with them were good men, one of them being Pedro's son-in-law, Juan, who was going along for the express purpose of avenging Pedro's death. He told us that Mariston and Willis were in excellent spirits and, that if any men could live to conquer the *terra prohibitiva* twice, that they were the men. He promised to advise me at once of any news or rumors that reached him.

That letter was received over eighteen months ago. There is no need to detail the thousands that I have spent or the hours that I have put in, not only with the old receiver that I heard Nankivell on, but on newer and more powerful ones that I have developed, going to unheard of low wave lengths, but my only result has been, with one exception, the silence of the grave.

Once indeed, in the dead of night, I heard, or thought I heard, faint and distant, the drumming of the hooves of the Golden Calf, the dreaded Drums of Tapajos. They faded almost instantly and I may have been mistaken. If I did hear them, what did they signify; the doom of my two friends and thus the doom of Troyana, or the doom of Amos and his cohorts? I do not know and I fear that I never will.

Good old Bob, you of the level head and the true heart; you, Ray with the lion-like courage and the shrewdness of the fox; and Frank—impulsive, carefree, lovable Frank Nankivell. Where are you now? And beautiful heartless Troyana—what is your fate? Only the Gods of Troyana can answer and to me, who heard the call and did not respond, they are silent—silent as the tomb.

THE END.

The Act of Retipuj

By Samuel Garfinkel

JUST what effect is cosmic time likely to have on the atmosphere of this earth? Various predictions have been made by men of authority on this subject. Changes are so slight that we, in our human span of life, can hardly expect to notice them. But what if, some time in the dim future, the change becomes so great that it will definitely affect living conditions on the Earth. In this short, short story, the author uses this theme to give a novel scientific basis to "Retipuj." How well he succeeds you can see for yourself.

Illustrated by WESSO

ON Sunev, Threa 16, 4036, Ruyerem Arsm lay on his death-bed. Knowing that he had not long to live, he ordered his servant to call Runtas Sunaru I, ruler of Venus, in order to relate to his ruler an exceedingly important tale which would aid in clearing a profound mystery on Venus. The servant left in full haste to summon this great personage. Upon his arrival, Arsm extended to his ruler the courtesies of his home from his death-bed.

He then bade his ruler to be seated. Breathing painfully, he began:

"It is needless for me to tell you that I am unmarried, for that fact is fully known to you. What you do not know is that I am the last descendant of a family whose name is next to yours in importance. This name becomes extinct with my passing. You will soon, I hope, understand why I assign my name such an honor when you become thoroughly acquainted with this extraordinary tale that I am about to relate to you. It may sound to you as if a madman were speaking, yet it is, nevertheless, true and will explain much that you would wish to know.

"Before beginning, let me review for you something which is already known to you, and which this wonderful narration will explain. For the past quarter-century we have attempted communication with Earth without any success. This has been a puzzle to us because we have already obtained answers from Mars and Jupiter. The Earth is much nearer to us than are these two planets, causing the question to arise in our minds whether some phenomenon is stopping our attempts. We have been trying to find out what this phenomenon might be with little or no success. The tale that I am about to relate will explain why Earth does not answer. It has been told from generation to generation in my family and was told to me in my father's own words. As I am the last of the Arsm family and the story leaves me and goes to you, it is no longer an heirloom, but should become a legend.

"This legend must go on so that all our children will understand and appreciate all that has been done for them by our friend, Retipuj."

The Tale Follows

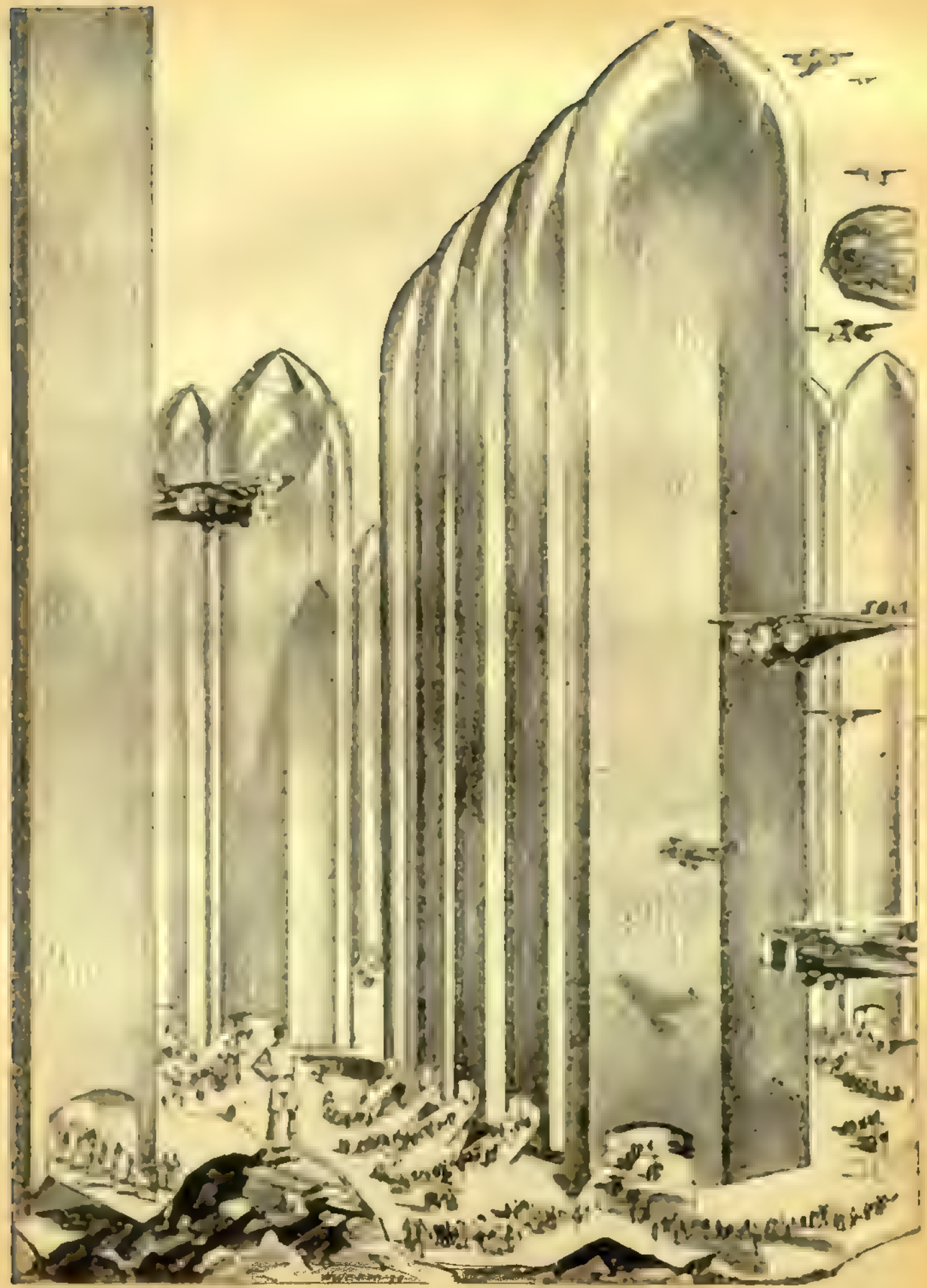
IN the year 2030, Earth-time, before an altar covered with sparkling diamonds and plated with silver and gold, there kneeled an Aztec Indian who was fervently praying to his Sun God whose figure rose majestically above the altar. The Indian looked to be no more than twenty-five. His hair was black and straight; his eyes were twin black wells that seemed to have some mysterious depth. Above his eyes his eyebrows were jet black. Long, curved black lashes protected those twin black wells. His nose was straight and his mouth was firm. His herculean body rested upon legs that were strong, sturdy and agile. His look was alert and he showed a scholarly forehead. He was six feet three inches tall and was built straight as an arrow. As he kneeled and stretched his arms towards his god, he began to speak the moment the burning incense had reached the height of his god's face.

"Oh, mightiest of gods! Ruler of the Sun! Hear again my tale and rid me of this life full of pain and torture. Today ends the thousandth year that I live on this Earth, nine hundred years of pain and torture.

"Nine hundred seventy-five years ago I was proclaimed as the greatest of astronomers because of the magnificent and wonderful phenomena that rose before my people's eyes made visible through my discoveries. One night, as I lay sleeping, you came and spoke to me as follows:

" 'Retipuj, for the discoveries you have made and for your fertile brain and imagination, I have chosen you for a mighty task. You shall live on this Earth until you have performed this task; you will rescue all living races from a disaster that threatens the world. Until that time comes, you are immortal and cannot die. Prepare for this task by absorbing as much knowledge as you can. Good-bye.'

"I awoke soon after to find myself in a cold sweat. I thought I had dreamed and so I laughed at this nightmare. It did not take long for me to find out my mistake and to realize that you did really come and speak to me. Five years afterwards, I married and had children. They grew up to soon forget the knowledge I gave them. Dur-



¶ I saw in the parties around them were told to enter the gate; while the supernatural proceedings of Shadrach and his men power wrought a marvelous change upon them.

ing all this time I did not neglect my chosen profession of astronomy but became more completely versed in it. Also I began studies in various scientific branches, including physics, chemistry and prehistory.

"Soon I had passed my hundredth birthday to see my parents and wife leave for that land where you rule in person. Years passed and my heart healed, but not for long. I saw all my friends go the way of my parents and wife, my children and their children. I alone remained immortal. Anguish seared my soul. Pain for my beloved ones, long dead, shone in my eyes. Tears of blood were in my heart while I remained dry-eyed, suffering in silence. I prayed to you, offered sacrifices, and burned incense every day, but to no avail. I was doomed to live, unwillingly, the life you had given me even though I tried all poisons, guns and knives.

"Upon finding that I could not die, I closed my eyes to all pain and anguish and began to study for the task you had set me. I had learned all there was to learn when you came to me a week ago and bade me go to this altar to pray and burn incense. This am I doing, O Mighty One, and now I await your word."

As he ended this tale and prayer, Retipuj put into each burner more incense to replace that which was nearly gone. He bowed down until his head touched the floor. Soon music was heard; the body of Retipuj stiffened, turned, and lay still with face upward. A soft, gentle voice that seemed to issue from the mouth of the idol floated through the air. Its words were:

"Retipuj, listen carefully to that which I say to you because your mighty task is near. When you awake you will find yourself in an unknown land. You will be in a huge factory which will contain all the machines necessary for your preliminary task. Outside you will find three mines. In each of these mines there is a different metal yet unknown to Earthmen. Extract the metals from their ores, purify them and form an alloy of all three, using the formula that you will find written upon parchment and placed in your hand. In the mines there are just enough of the metals to form the required amount of alloy. When you have finished forming this alloy, you will begin to make the projectiles with which you are to transfer all races to our neighboring planet, Venus. The alloy that you will form will have stupendous properties after it is shaped into the projectile, and a certain power, more powerful than any combination of rays and currents yet known on Earth, is generated to propel it. How to make the generator for this power and how to make the projectiles, as well as the knowledge of their stupendous properties, you will find already instilled into your brain by hypnotism.

"I shall now explain to you what the impending disaster is. A century ago the atmosphere was composed of 20% oxygen, 79% nitrogen, and about 1% inert gases, including carbon dioxide. Today, unknown to the scientists and due to the fact that all country lands have been swallowed up by cities whose people have long forgotten how to plant and how a tree looks, the oxygen has diminished to 18%, the nitrogen remains at 79% as do the inert gases at 1%, while carbon dioxide has increased to 2%. The reason the oxygen has gone so slowly is because the country only began disappearing during the last half century. People have forgotten how to plant because their food is made in concentrated or synthetic form from the primary constituents by scientists. The trees and vegetable life have given way to skyscrapers that hold the hustling people who are slowly overcrowding the world. War, as you know, has entirely ceased because there is only one infinitely contented class, where there is no distinction between East and West and only one person rules the entire world.

"Within a few centuries the oxygen will entirely disappear and in its stead will be 20% carbon dioxide because there will be no vegetable life to consume the carbon dioxide which is formed in a thousand and one different ways, while the oxygen is being consumed constantly by all animals and by many different combustions.

"You now realize that life will become extinct if no oxygen can be obtained to take the place of that which is being used. There is no way to replace this gas, because all its available compounds are being used to form the concentrated foods. To prevent the extinction of human life, it is necessary to transfer the people to a new planet whose atmospheric conditions are favorable for human life. Such a planet will Venus be after I am through working there.

"While you are building the projectiles and generators, I will be at work on Venus in order to further its evolution a few million years, for today Venus is as the Earth was these same few million years ago. Monsters similar to those that lived during the Earth's reptilian Age roam and rage in the primeval forests of Venus. To cause them to become extinct and to lower the heat of the planet so that Earthmen should be able to accustom themselves to their immediate surroundings when they arrive, will be my task.

"When you have finished the making of the projectiles and generators I shall come to you again and give you your final instructions for the salvation of humanity. Until then, Retipuj, Good-bye."

As these last words were uttered, the voice ceased and the body of Retipuj was encased in vapors. When the vapors had disappeared, nothing of the body could be seen at the altar or elsewhere. It had vanished into thin space.

WHEN Ratipuj opened his eyes, he found himself in a fully equipped factory, just as his god had told him he would. In his hand he found a parchment closely written upon, which gave him the necessary formula. Outside he found the three mines spoken of to him while in his trance. Immediately he began to mine the ores, extract the three metals, purify them, and finally, alloy them in their proper proportions. To accomplish this task, took him the best part of fifty years, inasmuch as he was doing all this by himself and irrespective of all the ultra-modern apparatus at hand. When this task was completed, he began the building of the projectiles and the generators for the new power with whose aid he was to transfer Earthmen to Venus in order to save them from the threatening disaster. The projectiles were of an enormous size, being one hundred feet in diameter and five hundred feet high. Their shape was very peculiar and to describe these projectiles is very difficult. It is sufficient to say that the top end was circular and came to a point, as in a bullet, while the end upon which each projectile rested was hexagonal. From one end to the other the shape of each projectile blended from hexagon to circle and from circle to hexagon, never diminishing nor increasing the diameter of one hundred feet. All of the projectiles, machinery included, were built of this alloy which we will call thulerconium. The generators which were to furnish the unknown power were also built of this alloy. Seven hundred of these projectiles could he

make before all of the thulerconium had been used up. To each projectile one generator was assigned. The projectiles could not function without the aid of this generator. The mechanism and machinery of the projectile and generator were so intricate that not even the cleverest of modern and ultra-modern scientists nor the most learned men had the remotest understanding of their construction. To complete these projectiles and generators took him one hundred years.

Upon the completion of this task, he set about to build an altar and an image of his god, which took him a few days. Upon the completion of the altar and god, he offered incense and prayed. Soon he fell into a trance similar to his previous one and the voice of his god came to him in order to give him his final instructions.

"Retipuj, listen carefully to these, your final instructions. The people on Earth will not be able to exist more than fifty years longer on this planet. My task on Venus is complete. Within ten years, Venus will be in conjunction with the Earth. On the night that you see a falling star within a radius of sixty miles above you and you see the moon divided by colors of red, yellow, and blue, you will know that the time has come for you to start the flight to Venus. Meanwhile notify the world of the impending disaster through the medium of thought waves. Of course this will be entirely new to them for no one has ever attempted this practice. Your will power is strong enough to perform this seemingly impossible task. It will take you about nine years to convince the world of what you say. If the worst comes to the worst apply hypnotism. You are on an uncharted island recently placed on the Earth through an upheaval of the section around Madagascar which has no more inhabitants. The tidal wave caused by this upheaval has wiped that island clean. This island upon which you are is only three hundred miles from Madagascar. All the people are to come to Madagascar from which you will transfer them to your island and immediately place them in the projectiles. When all the projectiles have landed on Venus, I promise you that I will give you that which you have so long sought for, death. Until then, do your work faithfully and follow instructions carefully. Goodbye, Retipuj. You have your final instructions, for this is the last time I shall speak to you while you are alive."

The voice ceased and Retipuj came out of his trance. Immediately he set himself to his task. Every day at intervals of three hours he sent out his warning, telling of the disaster and urging all to come to him. Papers began to speak of an unknown power that interrupted the people's thoughts at regular intervals and caused them to think of an impending disaster. Vaguely to their minds came the message and they seemed to know where to go in order to escape this. They had some thought of projectiles and Venus, although they were somewhat hazy on that score. Steadily for nine years they felt these thoughts. Each day the impulses were stronger. The papers attempted to scoff away these mysterious effects by blaming the weather and the climate which seemed to be slowly changing.

Meanwhile as the years rolled by the oxygen diminished as the carbon dioxide increased. Scientists and learned men soon discovered this through various tests and began to diagnose the thought impulses that they had been receiving all this time. Finally one man volunteered for a service of research into this matter. They soon were able to record the impulses on a super-phonographic plate which gave Retipuj's message to the world. During all this time, the loss of oxygen began to put in its deadly work. The feeble began to die out. Tuberculosis became the most deadly of diseases. The strong began to wilt and panic began to reign. The scientists broadcast Retipuj's message to the world. The message, besides explaining the thought impulses, caused a stampede for the island of Retipuj. Ships, submarines, airplanes, every available trans-oceanic vehicle was seized in this mad rush for freedom. Many failed to reach the island due to death; enough lived to fill all projectiles.

RETIPUJ, during all this, put all the interplanetary vehicles into shape. He filled all projectiles with enough food and drink to last all the people until Venus was reached. The new power, on decomposing, furnished the necessary oxygen for this great journey. As soon as the people arrived, they were told to enter the projectiles, where the stupendous properties of thulerconium and the new power wrought a marvelous change on them. As each person set foot inside the projectile, he was diminished in size until just one foot high. Thus many could enter each projectile.

All the projectiles were controlled by the one in which Retipuj had entered. All were ready for the great adventure. The night that the last projectile was completely filled, Retipuj saw the signal of the falling star and the colors on the moon, which told him that Venus was in conjunction with the Earth and that the time for the flight had come. Upon seeing this signal, Retipuj began the flight. All generators worked in unison and all vehicles shot simultaneously into the air, going at a moderate speed until safely out of the Earth's air blanket when they presently attained a speed of 186,000 miles per second, which is equal to the velocity of light. An unusual incident awaited them upon Venus.

As each vehicle came within the atmosphere of Venus, its speed was reduced and it was sent in a different direction by Retipuj so that all vehicles would scatter the Earthmen all around Venus. As each projectile struck the ground, the Thulerconium decomposed and gently wafted the people to the ground where they attained their original height.

When the vehicle of Retipuj decomposed, those within were pushed aside by an unknown force. Suddenly a bolt from the sky shot past Retipuj and ripped open a big hole where he stood. A second struck him causing him to fall into the hole, while a third covered the hole so completely that the people who started looking for Retipuj could not discern as much as a scar on the ground where he had last been seen. He had gone to join his fathers.

During all of the recital of this extraordinary tale, Runtas Sunaru had listened carefully. As the tale ended he sighed. Raycrem Arsm looked up at his ruler:

"You understand now why Earth has not responded and why the name of my family is important. You also know why this legend must go on. In about fifteen minutes I shall die. Swear to me that my words will not go unheeded."

Runtas Sunaru made an avowal to immediately tell all Venerians this tale. As the ruler finished this avowal he gave Ruycrem his hand to seal the vow. Ruycrem seized it, squeezed it once, sighed contentedly, and passed out of this world called Venus. The name of Arsm had become extinct.

THE END

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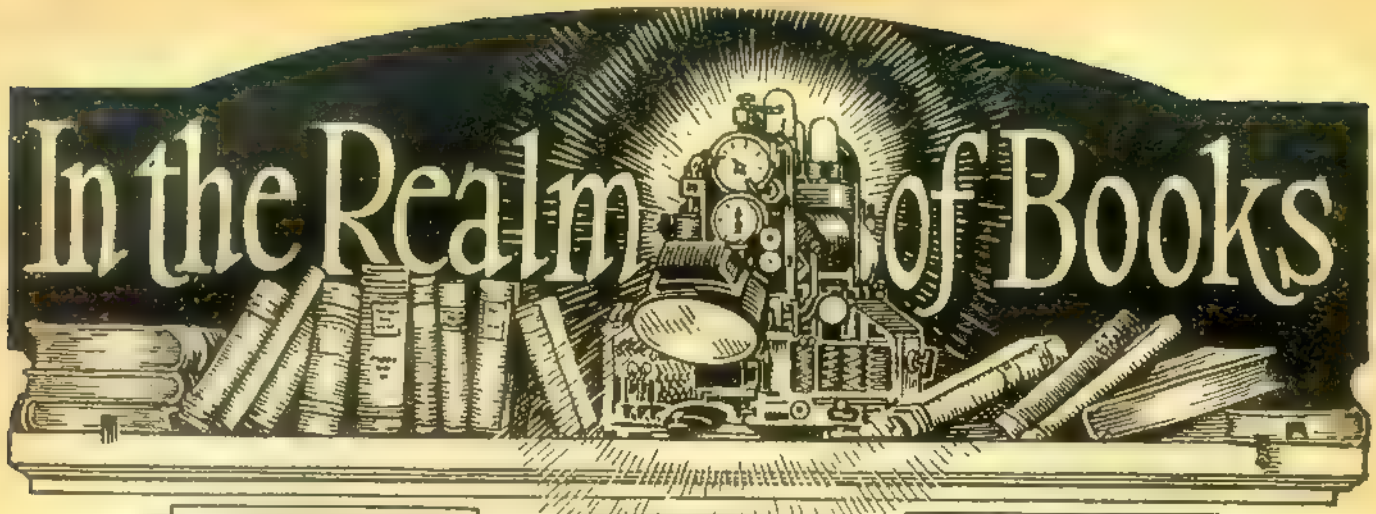


A Feminine World

"Terrania," or "The Feminization of the World," by Columbus Bradford, A.M. *Published by The Christopher Publishing House, Boston, Mass.*

THIS story is based on the marriage complex found rampant in North America. Somehow the American Youth of reality and of fiction is always marriage-bound. He simply has got to marry somebody. So in this story the hero, a Casper Milquetoast type (apologies to Mr. Webster of *The New York World*) *de facto*, a timid soul, falls hopelessly in love with Amy, his stenographer, who reciprocates his feelings, but will not marry him, because she has resolved to organize all unmarried females of the entire world to go on strike and not get married until war is abolished. Amy's idea spreads like wildfire and the "Federation of the World" comes into being, with the World renamed "Terrania" and Amy as the first female President. This is brought about by the marriage-crazy males signing over all political rights to the women, who promptly destroy all armaments, dissolve all armies and navies, until peace reigns supreme over all Terrania. Then the hero and Amy get married.

The book lacks finesse and fluidity of style, yet it has certain merits.—*C. A. Brandt.*

The Wild West

"Forbidden Range," by James Franch Dorrance. *Published by Macauley, New York, $2.00.*

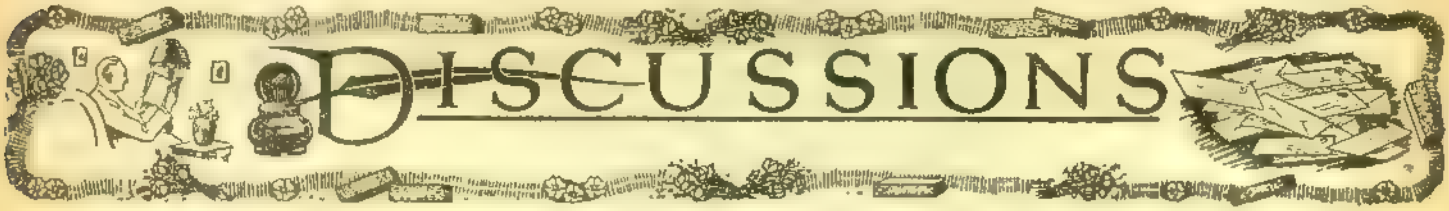
SURGEON TOMMY CRAVENS of the U. S. Government Service on a snooping expedition hires out for the "Circle S" ranch, where he meets Cyndora, the beautiful daughter of the ranch hero and finaly locates a rich gold mine on the ranch, guarded by active carbonic acid wells.

The story is well written, entertaining, humorous, and contains more action than two average western novels.—*C. A. Brandt.*

The Wicked Chinese

"The Day the World Ended," by Sax Rohmer. *Published by Doubleday, Doran & Company, Garden City, N. Y. $1.00.*

THE mastermind of this story is a Dr. Fu Manchu raised to the nth degree The story fairly bristles with things uncanny—vampires—batlike flying suits—ray screens—subterranean passages—inhuman scientists — mysterious voices — seductive female slaves, etc., etc. The story takes place in Baden Baden, Germany, and the ruins of the castle of Felsenweir is the precise location. The master of Felsenweir plans to destroy the entire world in one gesture, but the terribly clever reporter of one of our tabloids, aided by an American Secret Service Agent and another bright lad from *La Sûreté de Paris* furnish the monkey wrench which stops everything in time. All in all it is a very entertaining yarn, very exciting and quite plausible. It is well worth the investment of one dollar.—*C. A. Brandt.*



In this department we shall discuss, every month, topics of interest to readers. The editors invite correspondence on all subjects directly or indirectly related to the stories appearing in this magazine In case a special personal answer is required, a nominal fee of 25c to cover time and postage is required.

IN THE WORDS OF DR. BREUER

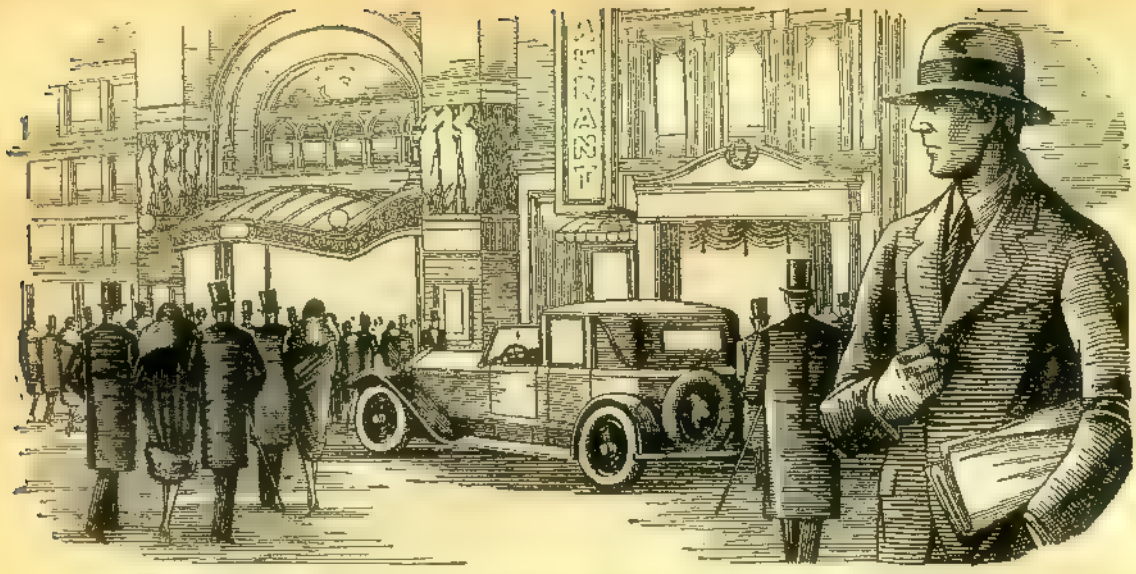
Editor, AMAZING STORIES:

Permit me to commend your November number. I am very much interested in your publication, and it gives me genuine pleasure every time you get out some good things. I've never been an editor and don't know how it feels; but I rather imagine that in these days of quantity production and high pressure living and superficial achievement, an editor of a science-fiction magazine must be up against it sometimes if he really prefers literature to twaddle. I judge that by the stuff I read in the general run of science-fiction magazines. As far as my own reading goes, ninety percent of present-day science-fiction as a whole is on about the same plane as the general run of Wild West and low-brow detective tales. I can imagine the editor raising his hands to heaven and supplicating Providence to send him something with the least bit of literary flavor in it.

The November number was good; but two of the stories appealed to me especially as a student of the literary phases of science-fiction. One was Stanton A. Coblentz' "Missionaries From the Sky." Heretofore, I have preferred Mr. Coblentz' (if there is a "doctor" or a "professor" before your name, please indulge my ignorance of that point) popular-scientific essays and books, to his fiction. Up-to-date he has not taken into consideration the fact that pure fantasy is not literature, and cannot appeal to the cultured reader. His stories have been largely untamed and unconfined soarings into the realms of scientific speculation, without the touch of realism that is demanded in modern literature, and with little interest in character and human motive. But, I like "The Missionaries From the Sky" partly because it is short. (Poe was right; many years ago he wrote that a long literary work cannot be a work of art, because attention and emotion cannot be sustained for a long time.) Partly because it gives us drama, conflict of human motives. And partly because it attains the atmosphere of realism, without which no science-fiction story can be anything else than a psychological document, interesting to the psychiatrist who is studying the mental state of the writer, but to no one else. Mr. Coblentz has the scientific background; I rejoice very much to see him also developing the literary touch. All I know about him is what I gather from reading his stories in this magazine, and all I say is based on such reading and on nothing else. Come again, Mr. Coblentz, with a *short* one, with real people and a convincing atmosphere.

The other is Jack Williamson's "The Cosmic Express." I have been intensely interested in Jack Williamson ever since I made his literary acquaintance. Though his first story showed chiefly promise of future possibilities, yet the promise was there. I have hoped that he would realize that real lovers of literature cannot possibly be interested in the play of rays on some distant asteroid, or the conflict of imaginary monsters that strained one's receptive imagination. I have hoped that he would understand that the only thing that the readers of the ages are interested in, is *people;* what they are, but especially, what they do. I knew he would do it some day, and he has done it in "The Cosmic Express." In this story he has worked out one of the principal *raisons d'être* of science-fiction: the effect upon human nature and

(*Continued on page* 954)



Always outside of things—that's where I was just twelve short months ago. I just didn't have the cash, that was all. No theatres, no parties, no good restaurants. No real enjoyment of life. I was just getting by, just existing. What a difference today! I drive my own car, have a good bank account, enjoy all the amusements I please.

I Couldn't Get the Good Things of Life

Then I Quit My Job and "Found" Myself!

HOW does a man go about making more money? If I asked myself that question once, I asked it a hundred times!

I know the answer now—you bet. I know the way good money is made, and I'm making it. Gone forever are the days of cheap shoes, cheap clothes, walking home to save carfare, pinching pennies to make my salary last from one pay-day to the next one. I own one of the finest Radio stores you ever saw, and I get almost all the Radio service and repair work in town. The other Radio dealers send their hard jobs to me, so you can see how I stand in my line.

But—it's just a year ago that I was a poorly paid clerk. I was struggling along on a starvation salary until by accident my eyes were opened and I saw just what was the matter with me. Here's the story of just how it happened.

One of the big moments of my life had come. I had just popped the fatal question, and Louise said, "Yes!"

Louise wanted to go in and tell her father about it right away, so we did. He sort of grunted when we told him the news, and asked Louise to leave us alone. And, my heart began to sink as I looked at his face.

"So you and Louise have decided to get married," he said to me when we were alone. "Well, Bill, just listen to me. I've watched you often here at the house with Louise and I think you are a pretty good, upstanding young fellow. I knew your father and mother, and you've always had a good reputation here, too. But let me ask you just one question—how much do you make?"

"Twenty-eight a week," I told him.

He didn't say a word—just wrote it down on a piece of paper.

"Have you any prospects of a better job or a good raise some time soon?" he asked.

"No, sir; I can't honestly say that I have," I admitted. "I'm looking for something better all the time, though."

"Looking, eh? How do you go about it?"

Well, that question stopped me.

How did I? I was willing to take a better job if I saw the chance all right, but I certainly had laid no plans to make such a job for myself. When he saw my confusion he grunted. "I thought so," he said. Then he held up some figures he'd been scribbling at.

"I've just been figuring out your family budget, Bill, for a salary of twenty-eight a week. I've figured it several ways, so you can take your pick of the one you like best. Here's Budget No. 1: I figure you can afford a very small unfurnished apartment, make your payments on enough plain, inexpensive furniture to fix such an apartment up, pay your electricity, gas and water bills, buy just about one modest outfit of clothes for both of you once each year, and save three dollars a week for sickness, insurance, and emergencies. But you can't eat. And you'll have to go without amusements until you can get a good, substantial raise in salary."

I began to turn red as fire.

"That budget isn't so good after all," he said, glancing at me; "maybe Budget No. 2 will sound better——"

"That's enough, Mr. Sullivan," I said. "Have a heart. I can see things pretty clearly now; things I was kidding myself about before. Let me go home and think this over." And home I went, my mind in a whirl.

At home I turned the problem over and over in my mind. I'd popped the question at Louise on impulse without thinking it out. Everything Mr. Sullivan had said was gospel truth. I couldn't see anything to do, any way to turn. But I had to have more money.

I began to thumb the pages of a magazine which lay on the table beside me. Suddenly an advertisement seemed almost to leap out at my eyes, an advertisement telling of big opportunities for trained men to succeed in the great new Radio field. With the advertisement was a coupon offering a big free book full of information. I sent the coupon in, and in a few days received a handsome 64-page book, printed in two colors, telling all about the opportunities in the Radio field and how a man can prepare quickly and easily at home to take advantage of these opportunities. I read the book carefully, and when I finished it I made my decision.

What's happened in the twelve months since that day seems almost like a dream to me now. For ten of those twelve months I've had a Radio business of my own! At first, of course, I started it as a little proposition on the side, under the guidance of the National Radio Institute, the institution that gave me my Radio training. It wasn't long before I was getting so much to do in the Radio line that I quit my measly little clerical job and devoted my full time to my Radio business.

Since that time I've gone right on up, always under the watchful guidance of my friends at the National Radio Institute. They would have given me just as much help, too, if I had wanted to follow some other line of Radio besides building my own retail business, such as broadcasting, manufacturing, experimenting, sea operating, or any one of the score of lines they prepare you for. And to think that until that day I sent for their eye-opening book, I'd been wailing, "I never had a chance!"

Now I'm making real money. Louise and I have been married six months, and there wasn't any kidding about budgets by Mr. Sullivan when we stepped off, either. I'll bet that today I make more money than the old boy himself.

Here's a real tip. You may not be as bad off as I was. But, think it over—are you satisfied? Are you making enough money, at work that you like? Would you sign a contract to stay where you are now for the next ten years, making the same money? If not, you'd better be doing something about it instead of drifting.

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Take another tip—no matter what your plans are, no matter how much or how little you know about Radio—clip the coupon below and look their free book over. It is filled with interesting facts, figures, and photos, and the information it will give you is worth a few minutes of anybody's time. You will place yourself under no obligation—the book is free and is gladly sent to anyone who wants to know about Radio. Just address J. E. Smith, President, National Radio Institute. Dept. 1-AS, Washington, D. C.

J. E. SMITH, President,
National Radio Institute,
Dept. 1-AS, Washington, D. C.

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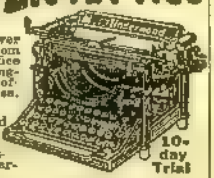

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human action of material progress, and the reaction of the one upon the other. Science is here, apparently to stay; human nature is here and always has been. What is going to be the result of the presence of this new thing, only come among us yesterday, scientific and industrial progress? Philosophers can tell us, perhaps. But how much better can the fiction-writer tell us! And Mr. Williamson certainly caught the note this time. I was surely glad to see it, Mr. Williamson, and I hope you do it again.

Now I surmise that the readers of the magazine are thinking, that instead of wasting his time on long letters like this, Dr. Breuer ought to get to work and write a story of the type that he wants to see so badly. I agree; but it isn't so easy. The kind appreciation of my work that has appeared in these pages has done a great deal to encourage me and stimulate me to further effort; and I think any time that I spend in the praise of the work of other authors, will be well spent. Perhaps some of them will be urged to produce the *magnum opus* that we are always looking for.

Miles J. Breuer, M.D.
Lincoln, Neb.

(Mr. Coblentz has established his status with our readers definitely as a great favorite. We are sure that none of our authors study out their stories more carefully than Mr. Coblentz studies his. If, in the printing, even a single word is changed he is apt to detect it, and this he really did once to our knowledge, so we feel that his work has a special interest in being so carefully studied out. Mr. Williamson is also a great favorite with our readers. Interplanetary stories have acquired a great popularity and many of our readers, like Oliver Twist, are asking for more. It is said that comparisons are odious so we will say nothing comparative about the fiction from Dr. Breuer's pen, with which we have been favored in the past. He is a most painstaking writer and when he departs from the field in which he has won for himself a distinguished name, he has his work gone over in some cases by some special experts to verify his data and conclusions. We are more than pleased to publish this most interesting letter from Doctor Breuer and we can assure him that his commendations of our work are very highly appreciated by us, and if he has followed our Discussions Columns he will see how highly his work in the field of fiction has been appreciated by our readers. All we can say is that if Mr. Coblentz and Mr. Williamson are not delighted with such a letter as this, they are lacking in the happy quality of appreciation.—EDITOR.)

AN APPRECIATION OF THE SKYLARK STORIES, AND OF INTERPLANETARY STORIES IN GENERAL

Editor, AMAZING STORIES:

I have just finished reading the October issue of AMAZING STORIES and I want try to express to you my appreciation of the story of "Skylark Three."

I have been reading AMAZING STORIES ever since it was first published and I am also reading the other Science Fiction Magazines that are on the newsstands, but I have never yet come across a story that could beat "Skylark of Space" published in your magazine in 1928. It was marvelous.

Now I am looking around for a word to express my appreciation for "Skylark Three," but I can't find any. It is by far the best that I have ever read. As for the other stories in your magazine some are good and some are not so good. But it is pretty hard to please everybody and I think you are doing very nicely as it is.

My particular brand of stories are Interplanetary stories and give us more of them if you can. I also would appreciate it if you could get Dr. Smith to write another story about "Skylark Three," having them visit other galaxies far beyond ours, where their enemies were bound before they destroyed them.

W. H. Hynes,
58 Fairview St.,
Sydney, N. S.

(Our correspondent is one of many who have admired the "Skylark" stories. The editors of the magazine have felt sometimes that they were giving too many interplanetary stories, but there is such a field of romance and excitement to be found in imaginings of the great world about us that the subject seems to elicit the best that is in them from our authors. We are sure that Dr. Smith will give your last suggestions due consideration. We esteem him very highly as one of our authors.—EDITOR.)

COMMENTS FROM A PRINTER WHO IS ALSO A DEVOTED READER OF AMAZING STORIES

Editor, AMAZING STORIES:

In writing this letter to you I want to say that what I know about science would fit in a pinhead, but I am always interested in learning more. I must admit I read your magazine more for the fiction in it than the scientific data.

Being a printer, etc., myself I wish to add my comments to the steadily increasing volume of letters that I believe that you must receive.

The paper that you use in your magazine is of a fairly good quality and I can see that you have eliminated gloss, I believe to insure more comfort for the readers' eyes. Am I not right? Also I believe that your stock is of thicker than 20 lb. basis, which, of course, is a fine thing. Frankly, you could have reduced the cost of your magazine by making it the smaller size that usually designates trashy stories but you did not and I believe that your magazine has achieved a higher point in my estimation. I would like to say, though, that although the paper you use now is of a fair quality, you might increase the quality of your magazine to a higher point.

For comments on the stories in the August issue: "The Skylark of Space" was a very fine story and if I can help it, there will be several more people reading the second instalment. "The Mystery of Prof. Brown" was good for a story of its length, but I would not waste space for these. I could not even push through "South Polar Beryllium Ltd." I couldn't get anything from it. "World Atavism" was fine and more of these would be heartily endorsed by myself. "The Last War" and "When Inca-Land Revolted" were fine also and stories like these will always be acceptable to your readers.

I have read your magazine a lot and to show you how much I enjoy it, when I was at camp last summer I walked 3 to 5 miles to the nearest town to get it.

Earle W. Newton,
14 Tompkins St., Cortland, N. Y.

(A glossy paper while it may be very good from a mechanical standpoint is certainly trying to the eyes, especially in these days of high powered electric lights. We do not like to reduce the size of the magazine pages. We feel that that would impair its appearance and might put it in a class where we would be sorry to see it. You must remember that the title AMAZING STORIES has now had a life of several years, and we feel that it would be very bad judgment to abandon it. Scientifiction is a coined word and certainly is not a good English language expression. You are one of many that admires the "Skylark of Space" stories. Other readers, however, have liked the stories which you do not care for.—EDITOR.)

THE FIRST UNFAVORABLE CRITICISM OF "SKYLARK THREE"

Editor, AMAZING STORIES:

The current (Oct.) issue of the pioneer and best science fiction magazine published, AMAZING STORIES, is one of the best issues yet published.

I placed the stories, according to merit, in the following order:

1. "Man Who Saw the Future"
2. "The Man From the Moon"
3. "Dynasty of the Blue-Black Rays"
4. "The Prince of Liars"
5. "Skylark Three."

"The Man Who Saw the Future" was a surprising change from Hamilton's usual type—*i.e.,* Earth threatened by invaders, etc.

"The Man From the Moon" is one of the most dramatic and touching stories I ever read. The end is peculiarly fitting, and brings the tale to a triumphal close.

"Skylark Three" was terrible. However—"one man's meat is another man's poison."

Really, no comment can be made upon AMAZING STORIES. It has reached the peak of perfection. The layout for the Nov. issue looks good. It can't be anything else with authors such as Meek, Coblentz, Starzl, Keller, Williamson and Pratt. Indeed it seems as if the November number will be an all-star number.

E. Anderson,
1765 Southern Boulevard, New York, N. Y.

(Your short letter is quite interesting. Your selection of stories you will find differs from that of others of our readers, and the "terrible" "Skylark Three," as you term it, has been praised greatly by numbers of our correspondents, who, we believe, would put it at the head of the list instead of at the foot as you do.—EDITOR.)

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INCA CHRONOLOGY. REPRINTS AND INTERPLANETARY STORIES WANTED. A SUGGESTIVE LETTER

Editor, AMAZING STORIES:

Possibly I would have kept putting off my writing to Discussions forever, if I had not noticed a mistake in the October issue of our magazine. It is this

In the story "The Dynasty of the Blue-Black Rays" by Milton R. Peril, Tenta Raci, the leader of the Incan band, asks "What century is this?" and is answered by one of the explorers, "The twentieth." Possibly Mr. Peril has the notion that the Incas dated their years from the birth of Christ. I doubt that they ever heard of Christ until the coming of Pizarro and the Spaniards. Maybe they reckoned their dates by the year of the ruler's reign. However, I am not an authority on this, and I can leave it to Mr. Verrill, or some other ethnologist to explain this. But they certainly didn't know what the twentieth century was. The explorer most likely should have answered, "The eight-hundredth since the accession of Manco Capac." It would have been more enlightening to the marooned Incans.

The rest of the October issue was excellent—each issue surpasses the last. First in my preference list comes the conclusion of "Skylark Three." The science and adventure fairly took my breath away. Tell Dr. Smith not to stop but to keep on with his wonderful stories. Next comes the story "The Prince of Liars." It is Mr. Hansen's best. It is told in such a queer and yet plausible way that one-half believes and half disbelieves it. Next in my estimation is "The Man from the Moon" by Otis Adelbert Kline. This story is a sort of prelude to "Maza of the Moon" which appeared in *Argosy* last winter. The other stories were up to the AMAZING STORIES standard.

The best novel that has appeared in AMAZING STORIES to date, in my opinion, is "Skylark Three"; the best novelette, "The Green Splotches," and the best short story, "Madness of the Dust." My favorite authors are Dr. Smith, R. F. Starzl, T. S. Stribling, A. Merritt, John W. Campbell, Jr., and Isaac R. Nathanson. Please give us more of these authors.

About reprints. How about giving us one serial reprint a year for us hungry reprint fans? I would suggest running Garrett P. Serviss's novel, "The Conquest of Mars" as the first. If this is absolutely impossible, please try printing them in paper-bound books at about 50c apiece. I hope that any reprint fans that want this will write in and endorse my proposition.

Interplanetary stories, as you may notice, are my dish. I can't get too much of them. I'll stick to AMAZING STORIES as long as you keep publishing them. If you are thinking of publishing AMAZING STORIES as a semi monthly, why don't you instead write two magazines—AMAZING STORIES, to be published about the first of the month, and Interplanetary Stories to be published on the 15th. I bet a shirt that within three years there will be an Interplanetary Stories on the market. Grab the title while the getting is good

For the benefit of the curious who wonder what kind of moron wrote this letter, I will state that I am sixteen years old, a junior in high school, and have a deep interest in Astronomy, Chemistry, and Scientifiction. I have read AMAZING STORIES since when it was first published and have a complete library of it, so I believe that I have a fair right to comment on it.

With best wishes to the foremost of scientific fiction magazines,

Edwin C. Magnuson,
1206 East Ninth St,
Duluth, Minn.

(The Incas of the story you refer to at the beginning of your letter might be supposed to be conversant with the reckoning of the Christian calendar, even though they may have been supposed to have used the Inca calendar for their own purpose. But wouldn't the explorer have made a mistake if he had said, as you make him say, that eight hundred centuries or 80,000 years have elapsed since the accession of Manco Capac? You have made a very good selection of favorite stories and favorite authors. We wish you could see the manuscripts now on file with us. If you did see them you would realize why we rather avoid giving reprints. In your fondness for interplanetary stories you figure as one of many. Your letter shows that you are many degrees removed from the moron class, and we feel we must thank you for expressing such warm appreciation of our humble efforts.—EDITOR)

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THE RATING OF THE STORIES IN OUR NOVEMBER ISSUE—MR. CAMPBELL TO BE HEARD FROM

Editor, AMAZING STORIES:

Here is your monthly brickbat and bouquet from yours truly, re: the November issue. I think I have already written about the October issue.

"The Drums of Tapajos," Capt S. P. Meek—First third. As usual Captain Meek is up to his usual high standard. Hope the second and third thirds are as good -dare not hope they are better—else he will be equalling Dr. E. E. Smith's "Skylark" masterpieces.

'Globoid Terror"—R. F. Starzl. In my estimation the title is misleading—very little is mentioned about the Globoid. Looks to me like merely the usual villain-hero-heroine type of story with practically no science—or should I say "super-science." Really far below your usual standard for stories.

"Pineal Stimulator." I. S. Stephens and Fletcher Pratt. Very good. I rate it along with Capt. Meek's short stories in previous issues.

'Iissionaries from the Sky." S. A. Coblentz. Very good. Will he write or has he written a sequel? He ought to—after having the Martians all ready—actually entering their balloon suits for their journey of conquest over the earth—and we could have another "War of the Planets" but let's hope it will be somewhat different.

"Cosmic Express." Jack Williamson. A four-star story except for one thing, which reduces it to a two-star tale, that being the hero and the heroine took no food—no matches—no arms. They went at it too casually to be "true to life" to be as really interesting as Jack usually writes.

"Solarite"—John W. Campbell, Jr. I saved it to the last purposely in this letter as I want you to tell J. W. C. Jr. of a couple of mistakes he made which would have ruined the story were he not the excellent author he is. First; page 731—Read the paragraph beginning in the right hand column: "Objects could pass right through us just as they passed through the air" (as long as we "were transparent")—only opaque objects were susceptible."—All O.K. so far—except—page 736—line 9 to 32—Arcot dropped *a can of luminous paint on the enemy plane* which was *transparent*, the same as the author had the *Solarite*—you remember *objects passed right through* while it was in the same state as the enemy plane. Page 733—L. H. column—52 lines from top (the beginning of the address.) Who made this address? Part seemed to be by Arcot—part by the Venerian or the Venerians. Which was it? Who made this error, the author or did your printer leave out part?—Also on page 733 preceding the address referred to— the Venerian speaks—"you have little gold and platinum—and morlus is unknown"—"in token of our appreciation we present this *small* disc of morlus to each of you." How come Mr. Campbell did not finish the thought he started and have the Venerians load down the *Solarite* with gold and platinum? He evidently meant to have his Venerians do so but overlooked it until way at the end of the story where the trend of thought had been broken—now a few pieces of gravel to go along with the heavy masonry I have cast. The captured enemy plane—why was it not used in the fight? How did he communicate with the Kaxorians *by radio* when he was not sure they had a radio system—judging by the Lanorians not having one, as stated—not positively—on page 723—L. H. column, 12th to 22nd lines. Speaking of invisibility—could not Arcot have interfered with the enemy's invisibility quite as easily by electrical vibrations as the enemy did with his own—rather than bring in the luminous paint? Also how did the luminous paint spread to cover such a large surface in so small a quantity and so short a time? Another thing! (As Andy says to Min)—isn't it the theory that the sun's *heat* is not radiated through free space but that its *light* is some way rectified into heat after reaching the earth or its atmosphere? Else why the supposedly intense cold of free space (theoretically). Also—if the *Solarite* received its energy by means of collector discs—*which must* face the sun—what happened to this supply of energy when avoiding a meteorite with the discs away from the sun? Also on these sudden turns at the enormous speed of around 12 M.P. sec.—well—remember the 300 M.P. hour aeroplane. It speaks well for J. W. C. Jr's. writing ability that even with these errors and discrepancies I still can rate his story at three stars.

Won't you call J. W. C. Jr's. attention to the last paragraph, above, please? I mean all this for sincere *constructive* criticism—not *destructive*, for I really like his stories.

W. J. Murro, Macon, Ga.

(It i evident from your letter that you are one of our most assiduous readers We publish this letter with great pleasure as it indicates that you take our work [and we can assure you that is the proper name for it] so seriously. It is a very serious business with the editorial staff. The editors have been with AMAZING STORIES from its first issue and you can imagine what a pleasure i is to find a reader who takes it so seriously as you do. Mr. Campbell has received so much praise for his stories that there is danger that his head will be turned, as the proverbial expression has it, and your letter cutting two stars off his line of decoration we are sure will do him a lot of good. He is young enough to learn and we are sure he will take your letter in the right spirit. —EDITOR.)

A TRIBUTE TO THE DISCUSSIONS COLUMNS. CRITICIZING OUR BEST AUTHORS CONDEMNED

Editor, AMAZING STORIES:

I am a comparatively new reader of AMAZING STORIES, having been introduced to its pages in 1928. Until now I have been merely an interested looker-on in the Discussions Column, having never taken part in the numerous controversies which have originated there. Nevertheless I intend to write numerous letters to you in the future, as I find it to be a very enjoyable and fruitful occupation. And by the way, I think that Jack Darrow is one of the most ardent science-fiction fans in the country. He is one of the steadiest contributors to your Discussions Column, and also to the columns of other science-fiction magazines. Will Mr. Darrow accept the humble congratulations of another fan? (Send me a letter sometime Mr Darrow, and I will return the favor.)

I am glad that "our" magazine does not waste precious space on "science-news" and other useless articles. Devote all available space to discussions, which I consider one-third of AMAZING STORIES value. In regard to reprints. I think it would be a good idea to publish these in the form of small booklets.

Never print more than one interplanetary story in each issue. They are probably the most popular type of science fiction, but quite undesirable. The stories by Septama are without doubt the very best interplanetary novels.

I was quite astounded when one correspondent condemned several of the best authors we have. The idea of criticizing Dr. Keller and A. Hyatt Verrill!

I believe that a contest to determine the three best authors would be very interesting. My choice would be:

1. Jack Williamson,
2. Stanton A. Coblentz,
3. Dr. M. J Breuer.

The first author has captivated me. His imagination rivals that of A. Merritt, and in my opinion he is a better scientist than Merritt. Coblentz' I admire because of some of the wonderful novels he has written in the past. The "Sunken World" was a masterpiece. He very cleverly interweaves science and fiction. The last author is so well known and universally admired that it is hardly necessary to explain why I admire him. He is original and his short stories have a philosophical touch.

Why not a few stories by Philip Knowlan, E. R. Burroughs, Francis Flagg, A. Merritt and Jules Verne? Although Verne's stories may be slightly antiquated I still think that they are very good science-fiction.

E. W. Garstang,
1408 Wright St.,
St. Louis, Mo.

(The editors cannot tell you how pleased they are with your view of the Discussions Column. We have a definite desire to make these columns a very distinctive and important part of our magazine. We are sure that our readers enjoy this section and enjoy writing for it. We will give full consideration and indeed have been doing so in the past to the idea of publishing reprints in the shape of booklets, and we certainly hope that ci cumstances will enable us to do this sometime in the near future. Before seeing your letter, we had in mind the restriction of the stories of interplanetary adventure so as to give plenty of other matter. We definitely agree with the implication in your letter that Dr. Keller and A. Hyatt Verrill are among our best writers. We would unhesitatingly put them among your three favorites, thereby increasing the number to five. You were right in saying that Dr Breuer is universally admired. We consider h n one of the b t EDITOR.)

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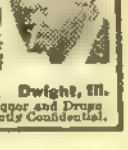

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AN INTERESTING LETTER FROM A NEW ZEALAND GIRL. AMAZING STORIES IN THE ANTIPODES

Editor, AMAZING STORIES:

I note in the correspondence column of your April, 1930, issue a letter from a reader in Glasgow. Well, here is a letter from an even more distant reader. So distant that it has taken me from November until now to find a store where I may obtain your magazine regularly. Should this store fail me, I shall probably be sending you an S.O.S. for a supply direct from you.

To date I have read only your November and April issues, but these have been sufficient to make me eager to miss no more. And I must add that I have never been able to say this of any other journal.

The outstanding feature of your publication seems to me that your stories always provide food for thought and speculation. Also they are cleverly written and bear witness to exhaustive scientific knowledge on the part of your authors. It is a pleasure indeed to hear from such men.

I notice that some of your correspondents criticize your stories for their improbability, but to me this is their chief virtue. So many "impossible" theories of the 19th century are now familiar, established facts, that one must hesitate to condemn anything impossible today as impossible for all time. And if we do not visualize these "impossible" things, how can we ever attain to them? There must be always a goal, and I have, therefore, no adverse criticism for your magazine, regarding it rather as a stimulus to the progress of man.

Interplanetary stories have a great appeal for me. They open up a delightful field of conjecture, although I hope that our first overtures towards our neighbors are not met with the hostility usually portrayed by authors. I liked "The Metal Horde" for its idea of interplanetary friendship.

"Cold Light" I enjoyed, it seemed to hang together so well. Also "The Brain Accelerator" and "Conquest of the Earth."

"The Green Girl" of which I have read only Part II was interesting and well written. I liked the account of the manufacture of nitroglycerine under difficult conditions.

I would like particularly to congratulate your authors upon the clarity of exposition of their theories. Some of these theories are set forth most convincingly and in such fashion that each step of reasoning involved may be clearly followed.

I would like to read some more about the Fourth Dimension. May I mention that I found most interesting the letter from Mr. Frank Brueckel, Jr., published in your April columns *re* the Einstein Theory of Relativity, and the "Godesic Flyer." I have not read the story in question but found Mr. Brueckel's letter ample compensation. Personally, I am more interested in the science than in the fiction.

As for myself I am eighteen years of age and a girl. But even this last fact does not impair my enjoyment of your journal. When I have read more of your issues, and have had an opportunity to become more familiar with your authors, I would like to write to you again and perhaps ask a few questions. As for criticism—well I am no believer in this, realizing that your selections are carefully and wisely made, but I certainly have no use at all for destructive criticism. Constructive criticism has its value though, do you not think?

Well, I am now awaiting your next issue rather eagerly, and certainly wish you every success.

Please accept apologies for the length of this letter, but it is my first.

Anyhow you have certainly linked up with New Zealand.

N. Osborn, 41 Madra St.,
Christchurch, New Zealand.

(It is always a pleasure to get a good letter from the Antipodes—a letter which has traveled about half way around this sphere of ours. The precise object of our publication is to provide food for thought and speculation as you very justly express it. It is quite difficult to secure from authors of fiction the due mixture of romance and adventure with science. The questionnaire which we publish in each issue you must not take as being complete. A good scientific fiction story will give food for thought in many directions, and a dozen questions cannot be supposed to cover the points in natural science in our magazine where so much is implied that may not be expressed definitely in words. It certainly is dangerous as you say to pronounce things to be impossible. In the field of airplaning, attempts at flying in a motorless

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plane have long been made. One of the early glider aeronauts was killed in the course of his experiments by a fall from the air, and this, remember, was all before the days of the Wrights. And now the last development in planing is successful gliding, when a man remains in the air with no motor, soaring about like a condor of the Andes for twelve or fourteen hours without touching the ground. A few months ago this would have been pronounced impossible. Your selection of stories is very good. "Cold Light" was an especially good one, for it is this cold light which is one of the goals that scientists are attempting to approach even if they do not attain it. Constructive criticism which you speak of certainly has its value, and sometimes we are afraid that destructive criticism, in the shape of a few brickbats, is a good tonic for an editor. We are glad to be linked up with New Zealand, as you express it, but we have heard from the land of the Maoris before this, as you will find by running through our correspondence columns.—EDITOR.)

A CRITICISM OF BARON MUNCHHAUSEN FROM AUSTRALIA

Editor, AMAZING STORIES:

I have read your magazine for some time and consider that by far the most interesting thing about reading AMAZING STORIES is picking out the little scientific flaws in some of the stories. For this reason I consider your "Discussions" section one of the most interesting features of your magazine. I know many of your readers dislike this type of criticism, but they must remember that such critics are not condemning the stories they deal with. Personally, the more flaws I find in a story the better I like it, and I know that it is the same with many other readers.

I have not noticed lately any criticisms of the mathematics of any of the stories you have printed, although some authors are particularly careless in this field. Take our friend Baron Munchhausen. I must apologize for resurrecting back numbers, but really the chance is too good to miss.

1. The Baron's space flyer has for its motive power the moon's gravity alone. The trip to the moon only takes 104 hours but in practice it would be impossible to accomplish the trip in less than 9½ days, under the given conditions as mathematical reasoning readily shows. The return trip would take 4 days, but that is another matter.

2. The Baron begins to retard his space flyer when 600 miles from the surface of the moon, using the earth's gravitational attraction. This is impossible as the gravitational attraction of the earth near the moon is 1/3600th of its value on the earth's surface, and in the distance named could only produce a retardation of about 5/5/11 miles per hour, so that the space flyer would crash into the moon with a velocity of 2394 6/11 miles per hour, assuming it to travel at 2400 miles per hour before retardation, as it would have to do.

The Baron took 48 minutes to "fall" right through the moon's center. In actual practice he would take 81 minutes. It is not hard to see the Baron's error here. He used the time honored formula $S = \frac{1}{2} a t^2$ and put a=acceleration at moon's surface. Calculation actually does give about 48 minutes, but really this single equation is no longer valid, as a is not constant throughout, as Münchhausen assumed. It decreases as we approach the moon's center; having zero value there. This problem is insoluble without the aid of the calculus (as is also the first problem).

Apparently Mr. Gernsback does not count among his accomplishments a knowledge of higher mathematics, hence his errors. I have enclosed the solutions of these problems to support the assertions made in this letter. There may be arithmetical mistakes, but I have gone over them carefully. I hope you accept this criticism in the friendly light I offer it.

R. W. Tames,
63 Cotham Road,
Kew, Victoria, Australia.

(You must remember that the adventures of Baron Münchhausen, as written by Mr. Gernsback, constituted a simple fiction tale and the mathematics were not supposed to be beyond criticism. The problem of what a mass would do falling through a hole going completely through the moon or the earth and passing through its exact center has often been thought over and presents rather an amusing topic, when we think of the body oscillating back and forth as it gradually approaches rest. It is gratifying to an editor to see the interest that is taken in the work of his contributors. EDITOR.)

AN INSPIRING LETTER FROM A SCHOOLBOY IN THE IRISH FREE STATE

Editor, AMAZING STORIES:

This is September and I am just reading the April number. I saw in the "Discussions Corner" a letter from a Scottie and thought that you might like to hear the opinion of a "Paddy." Like the Scottie, I get my AMAZING STORIES at Woolworth's stores here in Cork. First, about the authors. Edmond Hamilton, Dr. Keller, and Jack Williamson are strong favorites with me. I have no special favorite, as they are all so good. I think that there is no artist to beat Wesso, as his pictures are all absolutely marvelous and I admire his fertile imagination sincerely. If Wesso left "A. S." it would be almost a tragedy. Regarding your cover, I think that there is not a more attractive cover on the whole bookstand. I think that the paper could be improved a bit, although I think that it has improved lately. I wish that I could be assured of getting "A. S." regularly. I actually read the May number before I got the April number. I thought that "The Universe Wreckers" was a fine story even if it was strained a little too far out of the ordinary. The "Gimlet" was a bit of a bore, not because it was a very foolish story, but because it was written in language too advanced for the average layman-reader. Before I forget it, I want to say more(y) about that cover. Why did I neglect to say something about Morey before? If he can draw a beautiful design like that on the April number, he is worthy of as much praise as Wesso. By the way, were the Andromedans made of metal or what? If I sent you 15/-, which is about three dollars and fifty cents, could I get a year's subscription to "A. S."? As I am still at school, I don't see such a sum very often, but I am going to get it as a Christmas present, as I have always wished for a year's subscription to AMAZING STORIES. Well, Mr. Ed, I suppose I may see my letter in the October or November number which I hope to get about March or April, 1931. I hope that your great magazine will eventually become as well known and popular in Europe as it is in the U. S. A., and may the "A. S." authors and artists continue the good work without a break for many another long year.

Fitz-Gerald P. Grattan,
11 Frankfield Terrace,
Summerhill South, Cork,
Irish Free State

(You will get AMAZING STORIES regularly if you will subscribe thereto. The subscription price to our magazine for your country is four dollars. We have got many letters from England, Australia and New Zealand, but have been favored with comparatively few from your country, so you can realize that your letter is very welcome to us, and we shall hope to hear from you again.—EDITOR.)

HUMAN INTEREST IN SCIENCE STORIES

Editor, AMAZING STORIES:

I intended to write last month about that science-action controversy, but forgot it, but it was recalled when I read "Globoid Terror," by R. F. Starzl. I agree absolutely with Starzl in this matter of mixing adventure, action and romance with science. A pure science story is like an airplane without a motor in it. It takes human interest to make it go.

This man Starzl deliberately puts himself in the way of trouble, I think, by being too modest. To read his letters you'd think his stories are very weak on science. In truth they are stronger than the average. At any rate, one can swallow his scientific statements without gagging. A story may be full of scientific gibberish, and still be less scientific than one of Starzl's adventure yarns, because so much of the "science" "ain't so." John W. Campbell writes a "scientific" story that is "believable." R. F. Starzl writes a different style entirely, and his story also is believable, because the science is good; and enjoyable because it has the quality of a true short story.

Yours for good and better fiction,

Louis Stephenson,
Arapalive, Okla.

(You have made a good selection from among our authors, but do not forget that there are others. It is interesting to note how differently readers are affected. Some like you approve of mixing romance and science in stories. Some would leave romance out. And you hit the mark in what you say about "the quality of a true short story"—quality is what counts.—EDITOR.)

GOOD STORIES SPOILED BY A MISCONCEPTION OF THE READER

Editor, AMAZING STORIES:

Having read your magazine ever since it came out, I feel that I have a right to ask you at least one question—namely: How can a so-called rocket ship propel itself after reaching the void existing between the planets? As near as I can understand, this void is a perfect vacuum, therefore frictionless and of no resistance whatever to light rays. This being granted, what can the explosive force of a rocket be exerted against, to propel the rocket ship? This question in my mind spoils otherwise good stories for me, where rocket ships are involved. I can more readily conceive a ship being propelled by gravity-repelling rays, or better still, magnifying the gravity of another body much larger than the earth to such an extent that the earthly gravity could be overcome. Personally I think that in some far future date, this will be done, for it seems to me that science, once setting a goal, generally reaches it. I have no criticism to make of your magazine. I enjoyed "Skylark Three" very much, and really hated to see it draw to a close.

P. O. McQuade,
Hingham Center, Mass.

(Our advice to you is to prevent what we call "otherwise good stories" from being spoiled for you. Study Newton's Laws of Motion with a special reference to action and reaction and you will find that a rocket would go much faster and with less expenditure of power in a vacuum than it would in air and that the propelling gases will push harder against it in a vacuum than if it was in air. The presence of air diminishes the propelling action of the gases issuing from the rear nozzles. It makes them push as it were with less force against the rocket than if they were in the vacuum of space. So you needn't let stories be spoiled for you by this misconception of yours. —EDITOR.)

WOULD STARS BE VISIBLE TO INTERPLANETARY TRAVELLERS? ABOUT REPRINTS IN OUR MAGAZINE

Editor, AMAZING STORIES:

Your cover on the August issue is the best one I have seen this year. It might scare away some of the ultra-conservatives, but I think it is the kind that will attract more new readers than it will lose old ones; why not have that kind every month? Incidentally, it was drawn by Wesso, while the ones preceding and succeeding were drawn by Morey. I can't understand why you don't let Wesso draw all the covers, he is far superior to your other artists. But although the cover in question was unusually brilliant and attractive, it contained an obvious scientific error which should never have passed the editorial desk. Can it be that the editor is not aware that there would be at least a few stars visible in outer space while I have not been able to find even one on the aforementioned cover illustration? On the subject of illustrations, I am glad to note that the August copy contained one drawing by Paul and the September was adorned with three. It is my fervent hope that you will get Paul back as art director.

"The Message from Space," was the most interesting story in the July edition which was above par itself. A. Hyatt Verrill is just as good at humorous stories, such as "A Visit to Suari", as he is in yarns of deeper themes. "World Atavism" was a very unusual story as all of Edmond Hamilton's are and although his stories admittedly contain the faults mentioned by Arthur Ostrander, their originality and the breath-taking action more than offset these bad features. In the May issue you published "Madness of the Dust" by R. F. Starzl; here is an author of more than ordinary ability, try to get some more stories from him.

Now that all that is over I will get down to the real reason for writing this letter. It is my humble aim to chastise Mr. Kirschner for his inconsiderate and heartless attack on Victor A. Endersby. Mr. Endersby is an educated man and a deep thinker, his stories are highly concentrated food for thought and if they are not appreciated it is the reader's fault. Also, after criticizing one part of Mr. Kirschner's letter I very strongly desire to augment another of his opinions. I would like very much for you to print several of the old favorites, which many of us missed, in booklet form. This would answer your argument against reprints and I am sure that many of your readers feel the same way about it that I do. I am asking all the readers who missed "The Moon Pool", "The Face in the Abyss", "The Skylark of Space" and numerous

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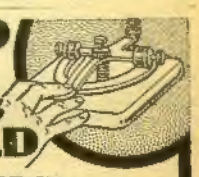

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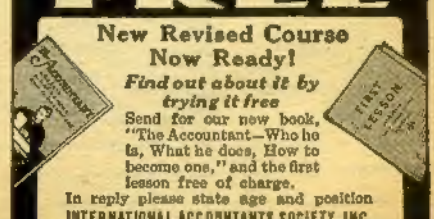

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others to write in and show the editor the consensus of opinion. It is bitter medicine for us to have to read a multitude of letters praising these stories and know that we will never be able to read them ourselves.

Before closing I want to thank the editor for the most interesting editorial that I have ever had the pleasure to read. I am referring to the one about the Atom and the Stars which appeared in the September copy. It explained many things which I had not clearly understood about the Quantum theory and the new wave-mechanics theory of the Atom. I suppose this is right in the Editor's line; being himself an instructor in chemistry. Hoping you will consider printing the classics,

Yours very truly,
Wayne D. Bray.

(If our correspondents could see the number of stories on our shelves, awaiting publication, they would not be surprised at our giving so few reprints. Stories by favorite authors keep coming in. We might wish we had twice the space to give them, which is now at our command. The Quantum theory in a broad sense may be taken to apply to the general disconnity of things. Its most usual application is perhaps to energy, but matter is made up of its own quanta or "bricks". As for the visibility of stars in space, if at what may be called an "interstellar distance" from a sun or luminous star, presumably the stars would be seen. Your criticism we think is a good one, for it must be perpetual night out in space. We are glad you enjoy Mr. Starzl's stories; we think he has done some remarkable work.—EDITOR.)

A LETTER OF CRITICISM FROM A FRIENDLY READER

Editor, AMAZING STORIES:

I am taking this liberty of writing you a letter on a subject which, I believe, is vital to a publication such as yours. It is originality in plot.

When A. S. was first launched on the stands, it was an original idea in periodicals. It caught the public's attention and held it—but, in my estimation, is wearing off. Why? Some time back, a reader wrote in Discussions that he had read the first few issues of the magazine and then, becoming fed up on interplanetary travel, atomic energy, etc., he had stopped reading the book for several months. Picking an issue up at a later date, he was pleased to find new plots and original themes. Perhaps you can see here what I'm driving at.

Now, honestly, admit it. How much longer do you think your publication will last if you keep up what you have been doing for a long time; namely, giving us stories with the same old plots, ideas and murderous scientists? The other science-fiction magazines have the same failing, the readers are treated to an original idea only once in a blue moon. Some one said that it was extremely difficult to think up an entirely new theme. *It is* hard but I have tried it and have thought about eight entirely new themes. I don't think that your magazine can survive another ten years if you give interplanetary tales with the same old wars and weary old formulas. A good exception is *The Skylark of Space.* Atomic energy is in it too, but it is so different from the others that it was welcomed with a great shout of relief and a general clamor for a sequel. Its sequel, *Skylark Three*, shows so many original ideas in the very first installment, that I'd be willing to wager that another shout for another sequel arises. Good old Dr. Smith; he realizes that a change is a good tonic.

You may think I'm exaggerating when I say that every science-fiction magazine seems to be on the brink of the downward path, but I mean just what I say. What is needed? The tired business man who sees, day in and day out, the same old scenes and sights, gets a tip from his M.D. to give himself a treat to new scenes. That's what all science-fiction magazines need. New ideas, not carbon copies of something that somebody has written before. That is all I have to say on this matter, Mr. Editor, and I wonder what you have to say.

There is something in my mind which has bothered me since the September, 1928, issue. It is: Why doesn't H. G. Wells appear any more? True, you published his *Lord of the Dynamos* since that month, but it covered a very small amount of space. In my opinion, it is Mr. Wells who put AMAZING STORIES on its feet. By that I mean that a person, who picked up an issue for the first time, was attracted to the magazine by the name of H. G. Wells more than if he had just looked at the cover illustration. The magazine needed *somebody* to advertise whether or not the stories were just filthy trash—amazing stories—or tales worthy of being read over and over again. Mr. Wells' name covered that point. All of which brings me to this statement: I, and almost everybody in the Brooklyn Scientific Club, and other outsiders, want the stories of Mr. Wells where they belong—in A. S.

And how about Jules Verne? For the last two years you gave us several stories of his in the first part of the year. How about this year? Brighten your pages with *The Hunt for the Golden Meteor* and *The Southern Cross.*. You might even add *The Green Ray.*

By this time, you must have the idea that I'm writing this in Kings County Insane Hospital, but I assure you that I am writing this because I want A. S. to rise to unequalled heights. So stick around for a few more lines.

Another science-fiction magazine seems to get all that Ray Cummings writes. How about you? A. S. should give its readers the same treat, get Ray Cummings for several issues and he'll be unable to write the sequels as quickly as they are demanded. By the way, what chance of letting Tubby go in a new trip around the universe? It seems a shame to let Tubby stay where he is and not come into the open once more. Get Ray Cummings to read this—but then, there must be hundreds of thousands before me trying to tell him the very same thing. Cummings has something new in his stories. And I enjoy his cute short sentences also.

Hurray! The sequel to *The Face in the Abyss* has been finished—but, alas and alack, I hear of no mention of AMAZING STORIES in connection with it. If you haven't already heard of it, here's the name. It is: *The Snake Mother.* Good old A. Merritt!

Well, that's all I've got to say except that *Vanishing Movies* by Teddy Holman is still missing. If this appears to be just a bit too critical, just remember that I have penned it for the good of your worthy magazine.

Isidore Manzon, 544 Myrtle Ave.,
Brooklyn, N. Y.

(This letter tells its story so clearly that comment is not needed. We wish you could realize the demand which exists for interplanetary stories. It would almost justify an *Interplanetary Monthly.* They are a favorite topic with Campbell and he receives the highest praise from our readers. It may interest you to know that Dr. Smith is one of our new authors. He wishes to write only when the spirit moves him. We have been criticized unfavorably for reprints from Mr. Wells and Jules Verne. Criticize all you feel inclined to—the editor realizes that it is good for him to be in close touch with his readers.—EDITOR.)

SOME CONJECTURES ABOUT GRAVITATION—THE POSSIBILITY OF AN ASSOCIATED FORCE

Editor, AMAZING STORIES:

In re Miss Baldwin's very sensible letter in Discussions, for August, I respectfully state that one part of the conclusions is open to doubt—or else the Newtonian (and Einsteinian) "laws" of gravitation are "all wet."

Reasons:

A. Apogee and new moon do not coincide on each cycle as her fifth paragraph requires.

In January, 1930, apogee fell about 14° R.A. before new moon. In August, at full moon.

B. As that "acceleration" means greater centrifugal force, it is additional to solar attraction.

C. The solar attraction, if as strong as stated, would pull the moon away regardless of where the center of gravity lay.

Which brings me to the idea which has been growing on me:

Gravitation is either much more powerful than the physicists and astronomers claim or else——

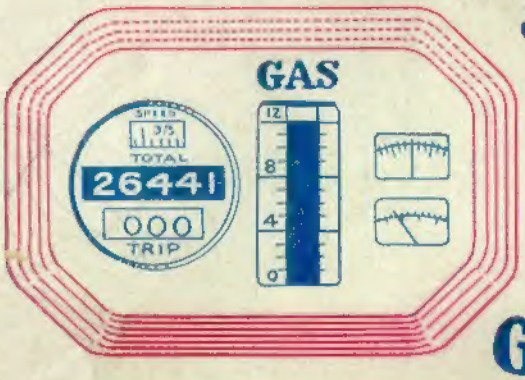
An associated, like, or primary force works with it to hold the solar system as a balanced unit.

Of the two hypotheses I definitely favor the second. In my opinion "gravitation" is a more or less local action of a much more powerful force of generically-like nature. It is far too weak, according to Newtonian theorem, to hold our earth in its orbit. But we are here. Rather firmly held, too.

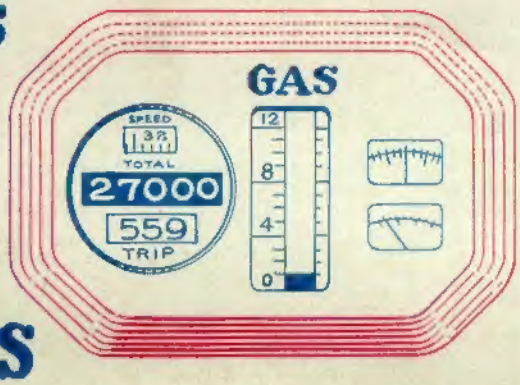
Leon Partridge,
Box 84, Cornish, Maine.

(In the letter of Miss Barbara Baldwin which was published in our August, 1930, issue, pp. 475-476, and to which letter you refer, there appears to be an attack on the astronomy expounded by Harl Vincent. We wonder how Miss Baldwin will feel when she reads your letter. We will leave it in the hands of fate to see what happens between you and Miss Baldwin, with perhaps the addition of Harl Vincent.—EDITOR.)

Over the Mountains from Los Angeles



559 Miles on 11 Gallons of GAS



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